n early closing event can we have that would be all right? , in talking with some of them down in the lobby this morning, ng others Mr. McLaughlin, he rather suggested an early closevent without naming the horses, and I would like to ask him n that horse should be named. How late?—say your early ng event closed the middle of May for one person, 1 per cent. the first time, then 1 per cent. at the regular time of closing, n should that entry be made?

r. McLaughlin: I think at the time you name the closing. All stuff would be live stuff, eligible the first of May.

Delegate: One of the things I want is a fair list of entries. next thing is something for the grandstand to see, and that is t I want to get at. Another thing, the horsemen talk to us it larger purses. Now, isn't it a fact, if you have a good horse want larger purses? If your horses are not very good you not want such large purses. The fellow with a string of es that are not very good, a $300.00 purse is good enough for

r. McLaughlin: You should encourage the local racers to in the game.

ne President: Gentlemen, it is getting late. We certainly reciate your attendance and your continued attention here, the program was very interesting.

there is no objection we will stand adjourned until 6:30 p. m., n we will assemble for the banquet.

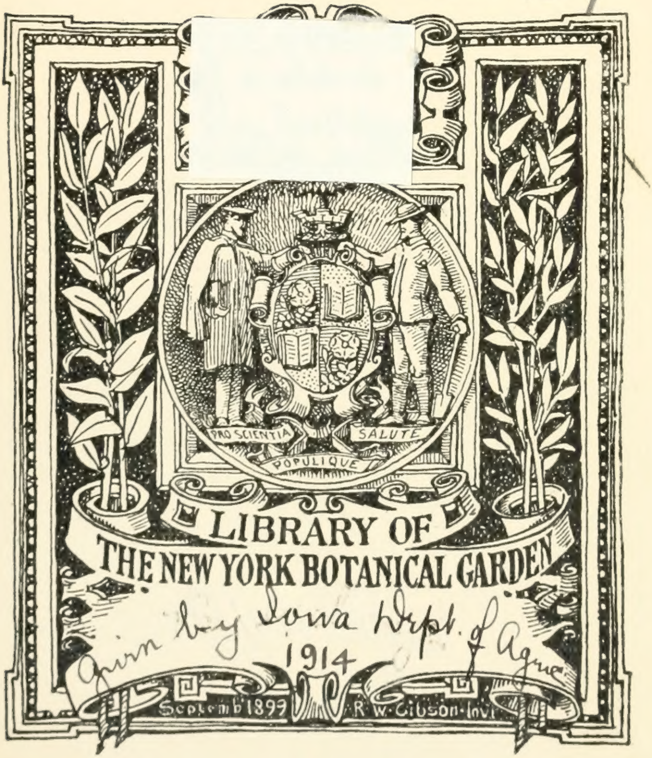
BANQUET, 6:30 P. M.

rogram opened with a vocal solo by Dr. Gibson.

ne President: Gentlemen, most of you are aware that this rnoon a few self-styled gentlemen,—fine fellows,—hurried to re us that they, and they alone, furnished the entertainment the fair goers of Iowa. They ignored the fair secretaries and red us that to them belonged the credit of entertaining more a million people in this state. They had their innings this rnoon—good looking fellows, most of them—but the fair secrees and the fair officials, I judge, will have their innings this ing. In Chicago last week I heard some of the professors or

SHOUT
SHARE
IT

XI .09


PRO SCIENTIA
SALUTE
POPULIQUE
Septemb 1899
R. W. Gibson Invt

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Given by Iowa Dept. of Agric.
1914

1

FOURTEENTH ANNUAL

Iowa Year Book of Agriculture

Issued by the

Iowa Department of Agriculture

1913

DES MOINES
ROBERT HENDERSON, STATE PRINTER
J. M. JAMIESON, STATE BINDER
1914

XI
.09
1913

LETTER OF TRANSMITTAL

Office of Iowa State Department of Agriculture.
Des Moines, Iowa, July 1, 1914.

To His Excellency, George W. Clarke, Governor of Iowa:

Sir.—I have the honor to transmit herewith the Fourteenth Annual Iowa Year Book of Agriculture for the year 1913.

Arthur R. Corey,
Secretary State Board of Agriculture.

INTRODUCTORY

The 1913 Iowa Year Book of Agriculture is presented herewith.

That agriculture in Iowa is marching steadily forward is evident in the splendid crop yields, the growing of a greater variety of crops, the increase in dairying and the success of the live stock interests, all of which are shown in the statistics and in the reports of officers of agricultural organizations as given in the following chapters.

Drouth cut short the crops somewhat in some of the localities in southern Iowa in 1913 but throughout the state as a whole the yields were good and prices were high.

The most serious loss to the agricultural interests in 1913 was the hog cholera loss. Statistics collected by this department show that Iowa farmers lost 2,709,876 head of hogs in 1913 from hog cholera. The losses are shown by counties in Part XIII together with other live stock statistics. The crop statistics are also shown in Part XIII.

Two additional parts have been included in the Year Book this year, Part III giving the proceedings of the Sixth Annual Meeting of the Iowa County and District Fair Managers' Association, and Part XVI, which presents a digest of the laws relating to the Iowa Department of Agriculture.

The manner of indexing has been changed from the former method of indexing the book by parts to that of indexing the book as a whole. The arrangement of the parts does not follow the same order as formerly. The statistics as to crops which have usually been in Parts II and III are to be found in Parts XII and XIII.

Part I contains a synopsis of the proceedings of the State Board of Agriculture and committee meetings during the year 1913. All meetings of the Board and executive committee and special committee meetings are presented.

Part II contains the proceedings of the State Agricultural Convention held at the State House, Des Moines, Wednesday, December 10, 1913. This includes the president's address and the reports of the secretary and treasurer; the financial statement of farmers' institutes; the financial statement and statistics of county

OCT 24 1914

and district fairs and the complete report of the Iowa State Fair and Exposition for 1913. It also gives an itemized statement of receipts and disbursements of the Iowa Department of Agriculture for the fiscal year ending November 30, 1913, including the premium warrants issued in payment of awards at the 1913 Iowa State Fair and Exposition and the expense warrants issued from December 1, 1912, to November 30, 1913.

Part III gives the proceedings of the sixth annual meeting of the Iowa County and District Fair Managers' Association.

Part IV gives the press reports of the Iowa State Fair and Exposition for 1913 and also the official report of awards in the live stock department.

Part V gives the proceedings of the annual meeting of the Iowa Swine Breeders' Association.

Part VI gives the proceedings of the annual meeting of the Corn Belt Meat Producers' Association.

Part VII gives extracts from the report of W. B. Barney, State Dairy Commissioner.

Part VIII gives the proceedings of the Thirty-seventh annual convention of the Iowa State Dairy Association.

Part IX gives extracts from the annual report of Frank C. Pellett, State Bee Inspector.

Part X gives papers on live stock, agricultural and miscellaneous topics, bulletins, etc.

Part XI contains the annual report of the Iowa Weather and Crop Service for 1913.

Part XII contains the statistical tables of Iowa's principal farm crops.

Part XIII gives the crop and other statistics for the year ending December 31, 1913, as collected by township assessors.

Part XIV contains a report of the agricultural conditions as given by county and district agricultural societies in Iowa.

Part XV contains a directory of associations and organizations representing agricultural interests in Iowa.

Part XVI gives the laws relating to the Iowa Department of Agriculture.

STATE BOARD OF AGRICULTURE
1914

EX-OFFICIO MEMBERS.

Governor of State	Des Moines
President of Iowa State College	Ames
State Dairy Commissioner	Des Moines
State Veterinarian	Des Moines

OFFICERS.

C. E. Cameron, *President*	Alta
O. A. Olson, *Vice President*	Forest City
A. R. Corey, *Secretary*	Des Moines
G. S. Gilbertson, *Treasurer*	Des Moines

DISTRICT MEMBERS.

First District—C. H. Tribby	Mount Pleasant
Second District—C. W. Phillips	Maquoketa
Third District—Elmer M. Reeves	Waverly
Fourth District—E. J. Curtin	Decorah
Fifth District—Cyrus A. Tow	Norway
Sixth District—T. C. Legoe	What Cheer
Seventh District—Chas. F. Curtiss	Ames
Eighth District—Frank E. Sheldon	Mount Ayr
Ninth District—John F. Summers	Malvern
Tenth District—John P. Mullen	Fonda
Eleventh District—H. L. Pike	Whiting

The President, Vice President, Secretary and Treasurer are elected for one year.

Terms of Directors from even-numbered Districts expire second Wednesday in December, 1914. Terms of Directors from odd-numbered Districts expire second Wednesday in December, 1915.

COMMITTEES

YEAR 1914

EXECUTIVE.

C. E. CAMERON.......................................A. R. COREY
O. A. OLSON.

AUDITING.

C. W. PHILLIPS.......................................J. P. MULLEN
T. C. LEGOE.

RESOLUTIONS.

E. J. CURTIN.......................................F. E. SHELDON
C. H. TRIBBY.

POWERS AND DUTIES OF BOARD.

C. E. CAMERON.......................................A. R. COREY
O. A. OLSON.
E. M. REEVES.
C. F. CURTISS

ADULTERATION OF FOODS, SEEDS AND OTHER PRODUCTS.

R. A. PEARSON.......................................W. B. BARNEY
CYRUS A. TOW.

NOXIOUS WEEDS, FUNGUS DISEASE IN GRAINS, GRASSES, PLANTS, ETC.

E. M. REEVES.......................................JOHN P. MULLEN
J. F. SUMMERS.

DAIRYING AND DAIRY PRODUCTS.

W. B. BARNEY.......................................J. F. SUMMERS
C. F. CURTISS.

ANIMAL INDUSTRY.

C. F. CURTISS.......................................J. I. GIBSON
H. L. PIKE.

LEGISLATIVE.

C. E. CAMERON.......................................A. R. COREY
O. A. OLSON.
J. P. MULLEN.
E. J. CURTIN.

REVISION OF PREMIUM LIST, RULES AND REGULATIONS.

C. E. CAMERON.......................................A. R. COREY
O. A. OLSON.
T. C. LEGOE.
C. F. CURTISS.
H. L. PIKE.

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IOWA'S SOURCE OF WEALTH

FOR THE YEAR ENDING DECEMBER 31, 1913.

COMPILED FOR THE IOWA YEAR BOOK OF AGRICULTURE FROM STATISTICS GATHERED UNDER THE IOWA STATISTICAL LAW.

ACREAGE, PRODUCTION, AVERAGE YIELD AND VALUE PER ACRE AND TOTAL VALUE OF IOWA FARM PRODUCTS FOR THE YEAR 1913.

	Acreage	Production	Average per acre	Average farm price Dec. 1, 1913	Value per acre	Total value
Corn	9,180,774	342,158,425 bu.	37.3	$ .59	$ 22.00	$ 201,873,470.75
Oats	5,205,978	184,500,993 bu.	35.4	.34	12.03	62,730,337.62
Winter wheat	525,616	12,210,812 bu.	23.2	.77	15.86	9,402,325.24
Spring wheat	276,390	4,137,995 bu.	15.0	.75	11.25	3,103,496.25
Barley	458,743	9,550,482 bu.	20.8	.53	11.02	5,061,755.46
Rye	74,599	1,179,307 bu.	15.8	.59	9.32	695,789.00
Potatoes	112,314	5,865,140 bu.	52.2	.85	44.37	4,985,369.00
Flax seed	15,462	121,869 bu.	7.88	1.36	10.72	165,741.84
Hay (tame)	2,959,960	3,568,590 T.	1.2	9.93	11.92	35,436,098.70
Hay (wild)	722,218	794,142 T.	1.1	8.80	9.68	6,988,449.60
Alfalfa	79,769	188,941 T.	2.4			1,821,090.00
Miscellaneous crops	85,434	Estimated				8,000,000.00
Timothy seed	223,579	877,583 bu.				3,059,965.00
Clover seed	129,867	152,820 bu.				592,552.00
Pop corn	18,188	525,942 bu.				385,000.00
Sweet corn	17,471	Estimated				700,000.00
Garden truck	51,856	Estimated				1,000,000.00
Orchards	148,437	Estimated				7,000,000.00
Pasturage	9,420,492	Estimated				83,000,000.00
Ensilage		Estimated				2,156,000.00
Total value farm crops						$ 438,157,440.46
Wool		3,327,297 lbs.				$ 1,500,000.00
Dairy products		Estimated				53,530,790.00
Poultry and eggs		Estimated				38,000,000.00
Total val. farm products						$ 531,188,230.46

NUMBER, AVERAGE VALUE AND TOTAL VALUE OF LIVE STOCK JANUARY 1, 1914.

(Figures taken from United States Year Book of Agriculture, 1912.)

	Number, all ages	Average value	Total value
Horses	1,584,000	$ 118.00	$ 186,912,000
Mules	57,000	123.00	7,011,000
Milch cows	1,350,000	60.50	81,675,000
Other cows	2,555,000	39.20	100,156,000
Swine	6,976,000	12.60	87,898,000
Sheep	1,249,000	5.30	6,620,000
Total			$ 470,272,000

IOWA FARM STATISTICS

Land area of Iowa	35,575,040
Total acreage in farms	31,658,759
Total number of farms	194.598
Average size of farms, acres	162.7
Number of hogs lost from hog cholera, 1913	2,709,876
Total population, 1910	2,224,771
Rural population, 1910	1,544,717
Value of all farm property, 1910	$3,745,861,000
Value of land, 1910	$2,801,974,000
Value of buildings, 1910	$ 455,406,000
Value of implements and machinery, 1910	$ 95,478,000
Farms operated by owners and managers, 1910	134,929
Farms operated by tenants, 1910	82,115
Value of live stock	$ 470,272,000
Value of farm crops and other products	$ 531,188,230
Total value of live stock, farm crops and other products	$1,001,460,230
Average value live stock, farm crops and other products per farm	$ 5,146

PART I.

Synopsis of Proceedings of State Board of Agriculture and Committee Meetings, 1913

A synopsis of the transactions of the Iowa State Board of Agriculture during the year 1913 is given in this chapter. All meetings of the board, the executive committee and special committee meetings are presented.

EXECUTIVE COMMITTEE MEETING.

JANUARY 10-11, 1913.

Committee met with all members present, also Director Curtiss.

Sketches for the cattle and sheep barns were submitted by O. O. Smith, architect. It was deemed advisable to have Mr. Pike and Mr. Summers, superintendents of the cattle and sheep departments, meet with the executive committee on Thursday, January 16th, to again go over the plans before asking for estimates.

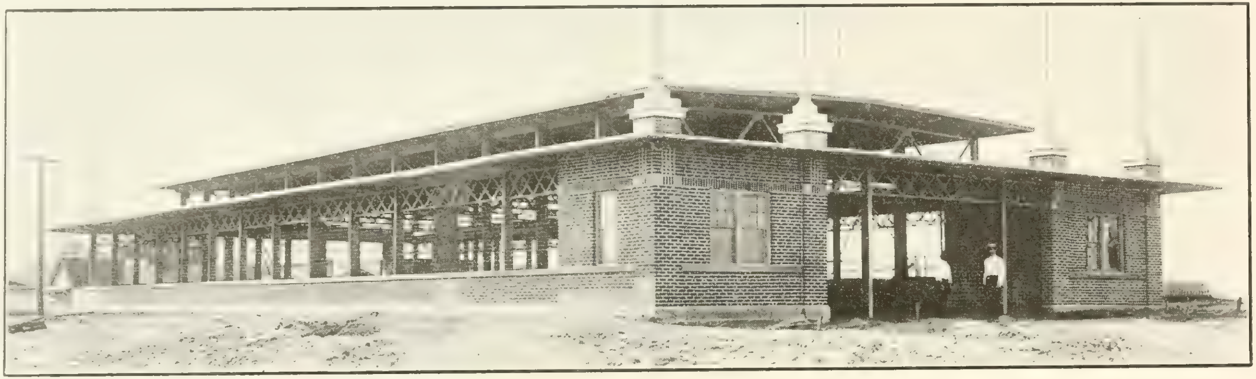
The bill of Mrs. Mary T. Watts, superintendent of the Babies' Health Contest, for postage and envelopes for sending out score cards after the close of the fair, was approved.

The secretary was instructed to write the secretary of the western fairs relative to a meeting in Chicago on February 19-20, to consider night shows, attractions, etc., for the 1913 fairs.

The plan for employing a publicity man for the department was discussed by the committee and Mr. Curtiss. Mr. Curtiss was requested to get into communication with two or three parties the committee had in view and report at the next meeting of the committee.

The proposition for carrying on farm contests was gone over by the committee and Mr. Curtiss. Mr. Curtiss was requested to formulate some plan for carrying on these contests and present same at the next meeting of the committee.

Committee adjourned to meet January 15, 1913.



New Cooling Out Paddock. Completed 1914.
Iowa State Fair and Exposition.

COMMITTEES.

President Cameron announced the appointment of the following standing committees:

YEAR 1913.

EXECUTIVE.

C. E. CAMERON..A. R. COREY
O. A. OLSON

AUDITING.

C. W. PHILLIPS..T. C. LEGOE
R. S. JOHNSTON

RESOLUTIONS.

E. M. WENTWORTH..E. J. CURTIN
F. E. SHELDON

POWERS AND DUTIES OF BOARD.

C. E. CAMERON..A. R. COREY
O. A. OLSON
E. M. REEVES C. F. CURTISS

ADULTERATION OF FOODS, SEEDS AND OTHER PRODUCTS.

R. A. PEARSON..W. B. BARNEY
E. M. WENTWORTH

NOXIOUS WEEDS, FUNGUS DISEASES IN GRAINS, GRASSES, PLANTS, ETC.

E. M. REEVES..JOHN P. MULLEN
J. F. SUMMERS

DAIRYING AND DAIRY PRODUCTS.

W. B. BARNEY..J. F. SUMMERS
C. F. CURTISS

ANIMAL INDUSTRY.

C. F. CURTISS..J. I. GIBSON
H. L. PIKE

LEGISLATIVE.

C. E. CAMERON..A. R. COREY
J. P. MULLEN E. J. CURTIN
O. A. OLSON

REVISION OF PREMIUM LIST, RULES AND REGULATIONS.

C. E. CAMERON..............O. A. OLSON................A. R. COREY
R. S. JOHNSTON C. F. CURTISS
H. L. PIKE

SPECIAL COMMITTEE MEETING.

JANUARY 15, 1913.

Committee met with Messrs. Cameron, Olson, Corey, Pike, Summers and Curtiss present.

Architect Smith presented floor plans for the cattle and sheep barns for the approval of the committee.

The committee approved of the plan of the cattle barn with a slight change in the arrangement of office and toilet rooms in main entrance.

A number of changes were suggested in the plan for the sheep barn and the architect was requested to draft and submit a new plan in accordance with suggestions made by the committee.

The architect was also requested to secure estimates on the above buildings as soon as sketches were completed.

The executive committee and Mr. Curtiss heard Mr. Wiseman and Mr. Whitney, applicants for the position of publicity superintendent for the department created by resolution of the board on December 12, 1912. The committee after giving careful consideration decided that the previous occupations of Mr. Whitney were such that he would be better qualified for the work he would be asked to carry out, and he was therefore appointed. It was agreed that Mr. Whitney should start work February 1, 1913, at a salary of $2,000.00 per year, payable monthly from receipts of the department.

EXECUTIVE COMMITTEE MEETING.

JANUARY 16-17, 1913.

Committee met with Messrs. Cameron, Olson and Corey present.

In accordance with the resolution of the board the committee selected J. F. Summers to fill the vacancy caused by the resignation of W. C. Brown on December 16th as superintendent of the concession and privilege department.

Mr. E. L. Beck of Des Moines was selected superintendent of the poultry department, and Mr. M. G. Thornburg of Ames superintendent of the sheep department to fill the positions made vacant by the appointment of Mr. Summers to the concessions and privilege department.

The committee was informed that the bond of Secretary Corey for $10,000.00 signed by the American Surety Company was on file with the Secretary of State.

Contract for printing 15,000 copies of the premium list for 1913 was let to the Purcell Printing Company at $5.25 per page, the paper to be of a whiter quality and similar to that used in the bulletins issued by the Iowa State College of Agriculture.

The communication from the Chicago Live Stock World relative to an appropriation by the department of $150.00 for three classes of under six months breeding pigs in the Poland China futurity was called to the attention of the committee. Secretary Corey was instructed to take the matter up with the superintendent of the swine department and get his opinion of the matter. The committee was of the opinion that the department should not further obligate itself on account of these Poland China futurities as the department is already pledged for $125.00 for the yearling classes at the 1913 show.

The communication from J. R. Pfander, secretary of the National Duroc Jersey Association, relative to classes and appropriation for barrow classes at the 1913 fair, was brought to the attention of the committee. The committee was of the opinion that it would not be advisable to add these classes and the secretary was requested to ask the National Duroc Jersey Association to offer their special money appropriated for these classes in classes that would conform to the regular Iowa classification in accordance with Rule 21, page 29, of the 1912 premium list.

The committee considered a proposition presented by Mr. Welcher of the Dynn Welcher Construction Company of Portland, Oregon, to construct a roller coaster upon the fair grounds. Mr. Welcher left his written proposition with the committee for further consideration.

EXECUTIVE COMMITTEE MEETING.

JANUARY 29, 1913.

Committee met with Cameron, Olson and Corey present.

The committee was given a hearing by the sub-committee appointed by the chairman of the Agricultural Committee of the House on House File No. 24, by Powers, relative to changing the manner of electing members of the State Board of Agriculture.

The committee prepared the following bill relative to the salary of the secretary and arranged to have the same introduced in the House by Hutchins of Kossuth county:

A BILL

For an Act to amend Section Sixteen Hundred Fifty-seven-n (1657-n), Supplement to the Code, 1907, relative to the Compensation of the Secretary of the Department of Agriculture.

Be It Enacted by the General Assembly of the State of Iowa:

Section 1. That section sixteen hundred fifty-seven-n (1657-n), Supplement to the Code, 1907, be and the same is hereby amended by striking out all of that part of said section following the period after the word "supplied" in the fifth (5th) line and substituting in lieu thereof the following: The secretary shall receive as salary such compensation as may be fixed and allowed by the state board of agriculture from the funds derived from the state fair.

Sec. 2. This act being deemed of immediate importance shall take effect and be in force from and after its publication in the Register and Leader and Des Moines Capital, newspapers published in the city of Des Moines, Iowa.

Howard N. Whitney, superintendent of the publicity department, was authorized to attend the meeting of the Associated Ad Clubs at Waterloo, Iowa, on February 5th-6th.

EXECUTIVE COMMITTEE MEETING.

FEBRUARY 5, 6, 7, 8, 1913.

Committee met with all members present, also J. P. Mullen, member of the legislative committee.

The minutes of the executive committee meetings on January 10 and 11, January 15, 17 and 29, were read and approved.

Architect O. O. Smith submitted sketches and elevations of the sheep and cattle barns and the following estimates on same:

CATTLE BARN.

Fred Weitz, general contract	$ 68,281.00	
Des Moines Bridge & Iron Co., steel	28,800.00	
Plumbing to be estimated	....	
		$ 97,081.00

SHEEP BARN.

Fred Weitz, general contract	$ 22,230.00	
Des Moines Bridge & Iron Co., steel	19,200.00	
Plumbing to be estimated	....	
		$ 41,430.00

Messrs. Cameron, Olson and Mullen appeared before the Agricultural Committee in the House on Thursday afternoon in support of House File No. 223, by Hutchins, relative to the salary of the secretary of the department of agriculture.

The following concurrent resolution by Senator Chase was passed by the House and the Senate on Thursday:

Be It Resolved by the Senate, the House Concurring:

That the Joint Committee on Retrenchment and Reform, under and by virtue of joint resolution No. 9, is respectfully requested to "examine the receipts and expenditures of the Iowa State Fair for the past two years and submit a special report to this General Assembly with any recommendations they may deem proper, looking toward retrenchment and the reduction of expenses in the conduct of the State Fair, and to suggest any changes that will promote the economical administration of its affairs.

Inasmuch as the above resolution did not call for any time for making such investigation, and whereas a delay in such investigation would work an injustice to the department, the legislative committee was responsible for having the following joint resolution introduced by Senator Doran and passed by both House and Senate:

Be It Resolved by the Senate, the House Concurring:

That an immediate investigation be had and a prompt report made to the Senate and House of the findings of the committee having in charge the investigation of the Iowa State Fair, by virtue of a concurrent resolution offered by Senator Chase in this chamber yesterday and Senate joint resolution No. 9, to the end that the General Assembly may have the necessary information for prompt and intelligent action.

The secretary was directed to notify Mr. M. G. Thornburg of Ames, Iowa, that he was formally appointed superintendent of the sheep department by the executive committee.

The committee adjourned to meet at the Auditorium Hotel in Chicago on February 17-20, to attend the Great Western Circuit meeting, meeting of the American Trotting Association, the Iowa, Nebraska and South Dakota Circuit meeting, and the meeting of western fairs to consider music and attractions for the 1913 fairs.

The secretary was requested to notify Mr. J. F. Summers, superintendent of concessions and privileges, to be present at the above meeting.

EXECUTIVE COMMITTEE MEETING.

FEBRUARY 12, 13, 14, 1913.

Committee met with all members present, also member of the board J. F. Summers.

In accordance with instructions of the board at their meeting on December 12th, and the estimates submitted by architect O. O. Smith, the committee prepared the following bill making appropriation for buildings and additional land at the state fair grounds and the same was introduced in the House by Representative Brockway and in the Senate by Senator Doran:

House File No. 371, by Brockway.
Senate File No. 241, by Doran.

A BILL

For an Act making appropriations for additional improvements and land at the Iowa State Fair and Exposition Grounds.

Be It Enacted by the General Assembly of the State of Iowa:

Section 1. There is hereby appropriated to the Iowa Department of Agriculture, out of money in the state treasury not otherwise appropriated, the sum of $192,000.00 for the following purposes:

For the erection of sheep barn	$ 45,000.00
For the erection of cattle barn	50,000.00
For the completion of building for exhibits of farm implements, machinery, vehicles, etc.	85,000.00
For sanitary closets	5,000.00
For the purchase of additional land and lots	7,000.00

Sec. 2. All moneys appropriated by this act shall be drawn from the state treasurer upon warrants issued by the auditor of state upon the order of the state board of agriculture.

Sec. 3. This act being deemed of immediate importance shall take effect and be in force from and after its publication in the Register and Leader and Des Moines Capital, newspapers published at Des Moines, Iowa.

Mr. Summers, superintendent of the privilege department, consulted with the committee and Mr. W. C. Brown, the former superintendent, regarding the conduct and details of that department.

The following supplies were ordered for keeping records in the privilege department: 250 duplicate receipts, one 200 page ledger, and a 100 page cash book.

Committee adjourned to meet at the Auditorium Hotel in Chicago as arranged at previous meeting.

SPECIAL COMMITTEE MEETING.

AUDITORIUM HOTEL, CHICAGO.

FEBRUARY 17, 18, 19, 20, 1913.

Messrs. Cameron and Curtin attended the meeting of the Great Western Circuit on February 17th and secured dates in said circuit for the Iowa State Fair.

On February 18th Messrs. Cameron and Curtin attended the meeting of the American Trotting Association at the office of the association. The purpose of the meeting was to consider and adopt rules governing racing over association tracks.

On February 19th the executive committee and Mr. Curtin, superintendent of the speed department, attended the meeting of the Iowa, Nebraska and South Dakota Circuit and agreed upon the following early closing entries:

Two-year-old trot	Purse	$ 500.00
Three-year-old trot	Purse	1,000.00
2:30 trot	Purse	1,000.00
2:20 trot	Purse	1,000.00
Two-year-old pace	Purse	500.00
Three-year-old pace	Purse	800.00
2:25 pace	Purse	1,000.00
2:14 pace	Purse	1,000.00

It was agreed that the 2:10 trot and the 2:09 pace should be raced under the plan of every heat a race. Closing dates for entries in the early closing events to be May 19th. Records made day entries close no bar. Entries in class races at the Iowa State Fair to close August 4th, Nebraska August 11th, South Dakota August 18th, and Sioux City August 25th.

On February 10th and 20th the executive committee and Mr. Curtin and Mr. Summers met with the managers of the western fairs as per previous arrangements to consider music and attractions offered said fairs by various individuals and booking associations. No contracts for bands or attractions were made at this time but were deferred until the committee could give the various propositions submitted careful consideration.

The committee agreed to accept the proposition of Herbert A. Kline for not less than ten first class Midway shows and Mr. Kline was instructed to forward contract for same; the agreed division of the gross receipts to be 30% to the fair and 70% to Kline.

SPECIAL MEETING OF BOARD OF AGRICULTURE.

FEBRUARY 21-22, 1913.

As per request of the joint committee on retrenchment and reform, all members of the board, except Mr. Sheldon, met at the rooms of the Department of Agriculture and the committee was notified that the board was in waiting.

At the request of the committee each member of the board appeared before the committee and was questioned relative to the receipts and disbursements, the management, etc., of the fair.

The following bill for per diem and mileage was filed with the request that same be approved by the committee on retrenchment and reform and that same be paid by state warrant inasmuch as the meeting was called at the request of said committee and no other business was transacted:

Name	Days	Rate	Amount	Miles	Amount	Total
C. E. Cameron	3	$4.00	$12.00	140	$14.00	$26.00
O. A. Olson	3	4.00	12.00	155	15.50	27.50
R. S. Johnston	3	4.00	12.00	158	15.80	27.80
C. W. Phillips	3	4.00	12.00	210	21.00	33.00
Elmer M. Reeves	3	4.00	12.00	123	12.30	24.30
E. J. Curtin	3	4.00	12.00	195	19.50	31.50
E. M. Wentworth	3	4.00	12.00	60	6.00	14.00
T. C. Legoe	3	4.00	12.00	85	8.50	20.50
C. F. Curtiss	1	4.00	4.00	37	3.70	7.70
J. F. Summers	3	4.00	12.00	160	16.00	28.00
J. P. Mullen	3	4.00	12.00	117	11.70	23.70
H. L. Pike	3	4.00	12.00	200	20.00	32.00
Total						$296.00

EXECUTIVE AND LEGISLATIVE COMMITTEE MEETING.

MARCH 4-8, 1913.

Committee met with members Cameron, Olson, Mullen and Corey present.

The minutes of the executive meeting on February 5-8, February 12-14, and special committee meeting in Chicago, February 17-20, were read and approved.

The legislative committee was given a hearing on House File 182, by Blackford, before the agricultural committee.

Mr. E. C. Bishop submitted revised copy for the premium list of the schools exhibits department, showing an increase of $98.00 over last year, or a total of $968.00. The committee allowed this increase and authorized the secretary to have 4,000 copies printed at once.

The secretary was authorized to pay delinquent taxes for 1911 on lots 14 and 15, block A, Cotton Mills Addition to Grant Park, amounting to $12.85 and penalty. This was in accordance with agreement made by Mr. Harwood who purchased the lots for the State of Iowa from Georgia Wishman.

The secretary was authorized to employ such additional clerical service as may be necessary to properly take care of the work in the stallion registration division and the department at salaries not to exceed $65.00 per month.

The superintendent of grounds was authorized to employ additional men and teams to haul cinders from the State House heating plant to fair grounds at 90 cents per load.

Committee adjourned to meet on Tuesday, March 11th, and the secretary was requested to notify E. J. Curtin to be in attendance at the next meeting.

EXECUTIVE AND LEGISLATIVE COMMITTEE MEETING.

MARCH 11-14, 1913.

Committee met with members Cameron, Olson, Corey, Mullen and Curtin present.

The executive committee and Mr. Curtin formulated and agreed upon the events for the 1913 speed program.

The committee also called into consultation C. H. Gelo of the Horseman and Art J. Hinrichs of the Horse Review, relative to establishing a futurity for foals of 1913 to be raced at the 1916 Iowa State Fair.

The committee after careful consideration agreed to add $1,000.00 to all entry fees for this event and agreed upon the conditions:

The committee agreed upon the advertising budget for advertising the speed events for the 1913 fair and the Iowa State Fair futurity. One half the space in the Horse Review, Horseman, and Spirit of the West from March 26th to May 16th, to be used in advertising the futurity and the other half to be devoted to speed events.

The executive committee closed contract with F. M. Barnes Incorporated, for the following professional acts for free attractions at the 1913 fair:

Slayman Ali's Wild Moors	$ 650.00
The Famous Florenz Troupe	550.00
McPhee & Hill	250.00
Lester Bros.	175.00
Little Hip and Napoleon	500.00
The Three Duttons	650.00
Three Baltus Bros.	350.00
Rollo The Limit	450.00
Total	$3,575.00

The committee accepted the proposition of Sig. A. Liberati for his band of forty-two musicians including six (6) grand opera singers for a seven (7) day engagement at the Iowa State Fair for $2,450.00 and directed the secretary to draw up contract.

Contract for printing 6,000 copies of the official catalog was made with Van Duyn & Lee's Advertising Agency, 701 Citizens Bank Building, Des Moines, Iowa. The catalog to be printed without cost to the department. Their compensation to be derived from the advertising therein and from sales at 10c each. A bond of five hundred dollars ($500.00) to guarantee carrying out contract and delivering catalog on time to be a part of contract.

The committee considered propositions from the Addressograph Company and the Rapid Addressing Machine Company for an addressing machine and equipment for the department.

They decided to purchase the rapid addressing machine and the following equipment:

Rapid addressing machine	$ 150.00
Monarch typewriter with stencil attachment	85.00
1 cabinet for stencils	12.50
1 base	2.50
1 top	2.50
30 drawers metal, at 35c	10.50
10,000 stencils	60.00
200 index tabs	2.00
8 sets alphabetical tabs	6.00
1 lb. of ink	1.00
Total	$ 332.00

The Des Moines Bridge and Iron Company was notified that the recent wind storm had blown off about one-half of the roof on the street car entrance and they would be expected to replace same, which they agreed to do.

The legislative committee, Mr. Geis Botsford, secretary of the Des Moines Commercial Club, and Mr. Thorne, railroad commissioner, appeared before the committee on railroads in the Senate in the interest of Senate File 327, by Boe. The bill having reference to reduced rates to the Iowa State Fair.

Minutes of March 4-8, March 11-14, 1913, read and approved.

EXECUTIVE AND LEGISLATIVE COMMITTEE MEETING.

MARCH 17, 22, 1913.

Committee met with members Cameron, Olson, Corey, Mullen and Curtin present.

Minutes of March 4-8, March 11-14, 1913, read and approved.

The legislative committee, Mr. Botsford, secretary of the Des Moines Commercial Club, and Mr. Thorne, railroad commissioner, appeared before the railroads and transportation committee in the House in support of House File 433, by Huff, relative to rates for the state fair.

The secretary was authorized to purchase $180.00 worth of postage to be used in mailing out 3,000 additional copies of the report of the stallion registration division.

EXECUTIVE AND LEGISLATIVE COMMITTEE MEETING.

APRIL 1-5, 1913.

Committee met with members Cameron, Olson, Corey, Curtin, Mullen and Pike present.

The committee appeared before the appropriation committee in the House on Wednesday in the interest of House File 371, by Brockway, asking for appropriation for permanent improvements at the fair grounds.

Mr. and Mrs. F. E. Garrison, Des Moines, Iowa, were granted the privilege of conducting an eating house for the speed men at the grounds until the first week of the fair. No charge to be made for the concession during the summer months but it shall be under the privilege department during the two weeks of the fair.

The committee authorized the superintendent of grounds to employ a man and team at $3.50 per day; his time to be devoted to keeping the track in first class condition, hauling manure from speed barns and making repairs to barns; also such other work as might be assigned by the superintendent of grounds.

The secretary was authorized to enter into contract for rental of not to exceed twenty acres of ground north of fair grounds and at not to exceed $9.00 per acre, to be cropped and used for plowing demonstrations during the 1913 fair.

On Thursday M. G. Thornburg met with the committee and made recommendations relative to the classification in the sheep department.

Member Summers joined the committee on April 4th and 5th to assist in matters pending before the legislature and to attend to matters pertaining to the privilege department.

SPECIAL MEETING STATE BOARD OF AGRICULTURE.

APRIL 7-8-9, 1913.

As per call of the president the board met at the office of the Department of Agriculture on Tuesday evening at 7:30, April 8th, with members of the committee on retrenchment and reform, for the purpose of going over the report of the accountants who had been engaged to investigate the department.

The following members were present:

Johnston, Reeves, Curtin, Wentworth, Curtiss, Summers, Mullen, Pike, Cameron, Olson and Corey.

The following brief was presented by the secretary in answer to certain charges and statements made by the accountants and printed in the House and Senate Journal of April 4th, as a supplement to the report of the committee on retrenchment and reform:

Referring to the report printed in the House Journal of April 4th, (pages 1935-1970) inclusive, by the efficiency engineers, Quail, Parker & Company, who were engaged by the Committee on Retrenchment and Reform to check up the department and make recommendations, we wish to take this report up item by item and make explanation of certain misstatements and unjust criticisms contained therein.

The first item is relative to the expenditures of the Iowa Weather and Crop Service (page 1938). The law under which the Weather and Crop Service operates, insofar as the state appropriation is concerned, is found in section 1681, Supplement to the Code, and reads as follows:

"State Weather and Crop Service—Appropriation. There is hereby appropriated, out of any money in the state treasury not otherwise appropriated, the sum of two thousand seven hundred dollars annually, to be drawn and expended upon the order of the president and secretary of the department of agriculture for such service, including the salary of the director, which shall not exceed fifteen hundred dollars per annum. (Sec. 1681, Supp. 1907)."

The following comment is made by the engineers:

"The expenditures under these two appropriations are checked in this department and certified by the president and secretary before warrants are issued—the director of the state weather and crop service presenting an account monthly for his salary ($125.00), his stenographer ($60.00) and his incidental expenses—but no record thereof is made in the financial books kept in this department."

The appropriation for the support of the Weather and Crop Service Bureau is made specifically for that bureau and is not made to the Department of Agriculture. The salary of the director and clerk is fixed by statute and the director keeps an itemized account of the salaries and incidental expenses. An itemized account is also kept of these expenditures in the State Auditor's Office and in the office of the Executive Council.

We see no reason why a fourth record of these expenditures should be made in this office and be confused with the finances of this department.

Under the heading: "State Fair Financial Position," we find listed the present value of the land and all improvements on the grounds prior to 1901 at $100,000. The fair grounds contain approximately 300 acres and if any attempt whatever had been made to arrive at the true value of the land it would not be listed at less than $200,000, saying nothing about the buildings and improvements on the grounds prior to 1901.

We should also like to know why the unexpended appropriation of $1,275.00 is listed with the assets and liabilities of the fair, when the law explicitly states this appropriation is made for the support of the Department of Agriculture, and it is so used.

"The original contracts for the erection of the main buildings, together with the architects' certificates supporting the payments therefor, have been submitted to us, and we are informed that, with one exception, no contract has been awarded, in connection with which, the proposals were not advertised and bids obtained in customary manner. The exception referred to was in connection with the erection of the cross-section of the horse barn which was required at very short notice and for which the board had not the requisite amount of time wherein to advertise the proposals in the usual way."

The exception referred to was not the cross section of the horse barn which was built in 1912. Contract for this section of the barn was let to the lowest bidder and the original contract and contractor's bond are on file in this department. However, in 1908, after the entries closed in the horse department, August 1st, the management found they were short about 120 stalls and contract was let to J. B. McGorrisk to build brick horse barn No. 2, an exact duplicate of barn No. 1, which was built in 1907, for precisely the same amount. The contract was let on the night of August 5th and the next morning a gang of men were on the works. By August 20th, the opening day of the fair, the barn was complete and occupied by the horse exhibit.

To provide temporary barns for 120 head of horses it would have necessitated an expenditure of from $1,000.00 to $1,500.00, practically all of which would have been a loss at the close of the Fair. Furthermore the temporary quarters would have been unsatisfactory for exhibition purposes and would have resulted in the loss of exhibitors in the horse department at succeeding fairs. I will leave this to the committee whether or not this was good business management.

"During the twelve months ended November 30, 1912, amounts aggregating $1,861.16 were realized at an auction sale of certain lots and houses, and amounts aggregating $1,444.33 were realized on the sale of part of the power plant. A further amount of $1,066.47 was also realized on the sale of part of the power plant during the twelve months ended November 30, 1911. We are informed that the prices realized on the power plant sales were in accordance with the valuation made by a local appraiser. As the records do not disclose the cost of the specific lots, houses and power plant disposed of, no adjustment has been made for the difference between that amount and the sums realized as stated above. The power plant which we are informed, is no longer used, is represented in the permanent improvements as at November 30, 1912, at the sum of $14,748.70, but as no inventory has been made of the machinery, etc., remaining in or belonging to the power building, it is impossible to even estimate the loss arising through the dismantling of this property."

Regarding the item of $1,861.16 realized at auction sale of houses and lots referred to above we wish to say no lots were sold by the department for the reason that the law does not permit the management of the Iowa State Fair, nor the Executive Council, to sell real estate after title to same has once been acquired by the state, without legislative action. Consequently I am at a loss to know where the engineers got their information as to lots sold by the department. The houses which were acquired with the lots purchased through our agent, and condemned by the Executive Council of the State of Iowa, for an addition to the state fair grounds were sold at public auction on May 31, 1912, after being duly advertised in all three Des Moines daily papers. The amount realized at the auction on each house is made a matter of record on page 87 of the minute book; in the record book showing receipts of the department, and by duplicate of receipts issued to the parties who purchased the houses. All of this evidence was submitted to the engineers for verification of these receipts. As I stated before the houses sold were on the lots purchased or condemned, and if there is any way to determine what the houses alone cost the State of Iowa we should be pleased to be enlightened.

Regarding the dismantling of the light and power plant on the grounds and the sale of salvage derived therefrom we beg to advise that in 1910, or the last year the plant was in operation, the expense of producing the current for light and power amounted to $1,641.65. The amount of current produced was equal to approximately 2,500 16-candle power lamps, which was about one-half needed to furnish power and properly light the grounds. The grounds were in total darkness one night during the 1910 fair, which necessitated a refund of all admissions for the stock pavilion show, amounting approximately to $500.00. A like loss was also sustained on the night show at the amphitheater.

With this situation staring the management in the face it was evident that one of two things must be done; either double the capacity of the plant and make it more efficient at an expense of $10,000 or $15,000, or enter into contract with the Des Moines Electric Company to furnish all the current for lighting and power purposes on the grounds, and dismantle the old plant. (I wish to advise here that the management had been negotiating with the Des Moines Electric Company for a number of years, with a view of securing the current from their plant, but not until 1911, at which time they rebuilt their local plant, were they in a position to furnish a sufficient amount of current for light and power at the grounds.) The management chose the latter plan and made a very desirable contract with the Des Moines Electric Company in 1911 and for that year the current furnished for light and power under this contract cost $782.64. The amount of current used was equal to approximately 5,000 16-candle power lamps. Thus you will see that current for light and power under this contract cost the management about 25 per cent of what it did to produce it with the old plant. I leave this also with the committee to determine whether this was a profitable change or whether great loss was sustained.

We employed electrical engineers to appraise the equipment in the old plant and "ads" were run in electrical journal and in the Des Moines papers. The receipts set out above were the results of these sales. We found it a difficult matter to dispose of this second-hand equipment and some of it was sold for less than the amount set by the appraisers. Part of this equipment is still on hand and the management will have to use their best judgment in disposing of same.

"Inventories.—No inventories have been taken of the lumber, hardware, forage or general supplies on hand at the fair grounds. In addition to the lumber and supplies obtained by purchase in the usual manner, large quantities of these materials have been salved from time to time from the wreckage of various buildings on the grounds, but no record has been made of the quantity or value of such materials and consequently it is a matter of impossibility to obtain any definite information as to whether the department has had the sole use or benefit of all such materials. We are informed that no large quantities of the above mentioned commodities are purchased except for specific purposes, but, as in the case of the salved materials, no systematic record is kept of the receipts and issues thereof."

The system we have adopted in ordering lumber, hardware, and general supplies at the grounds is as follows: The superintendent of grounds issues a requisition indicating thereon the amount of lumber or supplies needed for the building or improvement for which they are to be used. This requisition is brought to this office, where an order is made up in triplicate; one copy is retained along with the requisition in this department and two copies are sent to the firm where the supplies are to be purchased; one for their files and one to accompany the supplies when delivered to the grounds. The superintendent of grounds checks this order and if there is any discrepancy it is reported to this department and changes made on the order. Practically all supplies are ordered for a specific purpose and for that reason none are left over to invoice at the close of the year. The management has learned that it is not advisable to furnish carpenter tools, shovels, forks, etc., to employes on the grounds as they are easily carried off and a considerable loss would result therefrom. Our superintendent of grounds has been instructed that all men must furnish their own tools and be responsible for same.

Regarding inventories in the forage department at the close of the fair will say we make a contract with a milling firm, who furnish us with corn, oats, and mill feed, to the effect that their representative must be present at the close of the fair to invoice all unsold grain and mill feed and give us a credit memorandum for same, as the bill on file in this department clearly indicates. Only such quantities of hay and straw are delivered as can be disposed of during the fair so that practically none of this is left when the fair closes. What little that was left over after the last fair was disposed of to the parties who keep their speed horses on the grounds the entire year, all of which is duly accounted for and appears in receipt books of this department.

We have never attempted to keep a record of the salvage from buildings wrecked by the management and used for repair work on other buildings. If a system can be installed that would give us this information and would not be too cumbersome, or too expensive to carry out, it would be of value in determining the exact amount of improvements made on the various buildings at the grounds from materials from this source.

"The charges in the horse department are $2.00 per single stall, $4.00 per box stall, and $1.00 per pony stall; in the cattle department, $2.00 per single stall; in the sheep department, $1.00 per pen; in the poultry department, $1.00 per coop, and—or 25c per bird; and in the swine department, $1.00 per pen. The superintendent's individual departmental records, containing lists of the exhibitors and the amount of the rental collected therefrom for the twelve months ended November 30, 1912, and November 30, 1911, respectively for the above departments, were produced to us, and while the amounts stated to have been collected by each superintendent for the rent set forth above were found to be in agreement with the aggregate income from such sources entered in the receipts book, it is a matter of impossibility to state whether the amounts so accounted for properly represent the income actually derived from these sources, owing to the total absence of proper accounting methods."

The fees collected for coop rent in the poultry department and for pen rent in the swine department are all collected by the Secretary at the time entries are made and receipt is given for the proper amount, showing the number of coops and the number of pens reserved for each exhibitor. Duplicates of these receipts are retained and were checked by the efficiency engineers. A greater portion of the stall rent in the horse, cattle and sheep departments is also collected by the Secretary at the time entries are made and receipts are issued in the same manner as above described. The balance of the stall and pen rent in these departments is collected by the superintendent of the respective departments during the fair. The superintendent of each of these departments keeps a committee book, showing the number of exhibitors, the number of head of stock exhibited, pen, stall, or coop rent collected.

The pen, stall, or coop rent collected as shown by these committee books must correspond with the amount deposited with the treasurer and as shown by the secretary's books.

In addition to this, we submitted the plats used by the horse, cattle and swine department superintendents, showing the location and number of every stall occupied and vacant, and the name and address of every exhibitor occupying such stalls. The price of these stalls is fixed by the board and published in the catalog. Receipts from the treasurer were submitted, showing the deposit of money for every stall occupied at the stipulated price published in the catalog. We know of no more complete or accurate method of keeping this record without employing some one to count and check the stalls occupied during the fair, and the same question might then arise as to the accuracy of his work.

"Agriculture Exhibits: Dairy Exhibits: Fine Arts Exhibits, and Machinery Exhibits: The rentals in these departments are based on the amount of superficial space occupied in the case of fine arts and machinery exhibits, 5 cents per square foot, and we have verified the correctness of the income accounted for on the records for these two departments. The duplicate contracts for the space occupied by the individual exhibitors in the machinery department were not signed, however, on behalf of the lessees. We have been unable to verify the correctness of the income derived from the exhibits in the agricultural and dairy departments owing to the fact that no definite rule appears to have been enforced regarding the charges for space therein, this matter apparently having been left to the discretion of the respective superintendents. The total income entered in the superintendent's departmental records agrees in the aggregate with the amount entered in the receipts book, but our previous comments as to lack of proper accounting methods apply also to these departments."

Space in Machinery Hall is rented at five cents per square foot and contracts for this space are made in duplicate. The duplicate is sent to the firm renting the space and the original is retained by the superintendent of the department; practically all of these contracts are made by mail and it would be an utter impossibility to have them signed. However, the acknowledgment of the receipt of contract and a remittance of a part of all of the contract price makes it a valid contract, in our estimation.

The booths in the fine art, dairy and agricultural departments are rented for so much per booth, depending entirely upon the size of the booth and the nature of the exhibit therein: For instance, a booth in the dairy building sold for the exhibition of dairy machinery should not be sold for so high rental as a similar booth in the same building rented for a drink and confectionery stand. This would also apply in the agricultural building. In the fine arts building the rental charged for various concession booths depends entirely upon the size of space and the nature of the concession for which the booth is rented. In fixing the prices on these booths the superintendent is called upon to exercise his best judgment and discretion. A uniform charge for these booths could not be made without overcharging some and undercharging others. Contracts are entered into in all of these departments and the superintendent's committee book sets forth the name of the concessionaire, nature of the concession and amount charged. The amount deposited with the treasurer is also verified with the total amount of collections shown by the superintendent's committee book.

"Dog Show—This feature was introduced for the 1912 fair through the medium of the Greater Des Moines Kennel Club and the income derived therefrom comprises the entry fees together with admission receipts ($1,222.95) by examination with the tickets issued and returned records, but we have been unable to verify the correctness of the entry fees ($274.75) and sundry receipts ($103.48) as the department does not possess any documentary evidence of a satisfactory character."

The Dog Show conducted at the 1912 Iowa State Fair was a concession conducted under the auspices of the Des Moines Kennel Club. The contract we had with this club provided that the department was to receive 75 per cent of the net receipts and the Kennel Club 25 per cent. At the close of the fair the secretary of the Des Moines Kennel Club submitted us a statement, which included his entry book, showing $274.75 had been collected as entry fees from the dog show exhibitors; also an attached statement which showed miscellaneous receipts to the amount of $103.48. This was approved by the executive committee and settlement was made on that basis, the result being that the department made a net profit on the dog show of $96.93. If you are familiar with kennel club rules you will understand that the local kennel club controls this territory and no other show can be held in this territory without their consent, and it was for this reason and because the Des Moines Kennel Club could do much to promote the show that this contract was made.

"Concessions and Privileges—The amounts turned over by the superintendent of this department are in agreement with the entries in the receipts book, but the evidence placed at our disposal for the verification thereof has been of an unsatisfactory character, inasmuch as the amount called for by the individual contracts with certain of the concessionaries has not always been accounted for, and furthermore, in certain instances, the signature of the concessionaire has not been obtained to the contracts, thereby rendering these documents useless as a means of verification. We are informed that the discrepancies between the contract prices and the amounts turned over by the superintendent are due in some cases to the abandonment of the privileges by the concessionaires, and in other cases to reductions in the prices made by the superintendent acting within his discretionary power granted by the board. The individual amounts payable by the concessionaires under their contracts are fixed by the superintendent of this department, the board leaving the matter of the consideration payable thereunder entirely in his hands, and we are informed that it is impracticable for the board to fix definite prices beforehand, at which the concessions and privileges are to be granted, owing to the peculiar conditions under which this department operates. We verified the income derived from the concessions granted to the Reiss Shows, which was fixed at 35 per cent of the admissions thereto for the year 1912, but we have been unable to verify the income derived from the concessions granted to the Hatch Shows for the 1911 fair, as the unused admission tickets have been destroyed."

Anyone who is at all familiar with the people who have concessions on state fair grounds knows that the financial standing of these parties is not listed in Dunn and Bradstreet. At the time contract is entered into a partial payment is made. On Tuesday of the second week of the fair the balance of these contracts is due and collected. In some cases a concessionaire will find he has selected his location on what a concessionaire designates as "chump row," or in other words, he has selected a poor location and finds he is not making good and at the time of settlement on Tuesday morning he either gets a reduction on his contract from the superintendent or he moves out, usually the latter. This accounts for the few instances where the full contract price was not accounted for. The few contracts that were not signed were cases where the transaction was carried on by mail. The acknowledgment of the receipt of the contract and partial payment we hold makes this a valid contract whether signed or not.

There is a uniform charge for the lots used by the lunch and confectionery stands on certain streets; for instance, on a street leading up from the street car station, where the lots have a fifteen-foot frontage and are twenty feet deep, the charge is $100 for corner lots and $75 for inside lots. On other streets this charge is more and others less, depending entirely upon the location on the grounds. It would be impossible to fix a uniform price on each of these lots. For example, we might have a case where a fifteen-foot lot was rented for a lunch stand for $75, a lot adjoining it and the same size might be rented to an exhibitor of foreign agricultural products for $300 or $400. Again it might be necessary to rent two or three lots for a riding device where the rental would amount to $700 or $800.

I think upon investigation you will find the fixing of a price for lots in the concession department is left to the discretion of the superintendent in charge by every state fair in America. It would be utterly impossible to fix a uniform price for rental of these lots until you know the nature of the concession that is to occupy the space.

I note the efficiency engineers were unable to verify the income derived from the concession of the Hatch Shows at the 1911 fair, for the reason that the unused admission tickets had been destroyed. The tickets for the 1911 midway shows were handled the same as in 1912. The ticket auditor at the opening of the fair issues the superintendent of the concession department all side show tickets and takes his receipt therefor. In turn the superintendent issues these tickets to the ticket sellers for the various shows and employs ticket takers to take them up. At the close of each day the ticket sellers return their unsold tickets and a daily settlement is made on the basis of the difference between the number issued and the number returned unsold. At the close of the fair all unsold tickets are returned by the superintendent of the concession department to the ticket auditor, who gives the superintendent of the concession department credit for the number returned. The difference between the value of the number of tickets issued and the value of the number returned represents the number sold and the department shares 35 per cent of this amount.

Is it not strange that we did not anticipate this investigation and have the 1911 tickets on hand so that they might have been checked by the efficiency engineers?

"Sale of Forage—The amount included under this caption is derived from the sales of forage to exhibitors and others during the fair, but no satisfactory evidence has been produced to us in support of the amounts turned over to the treasurer by the superintendent. No record is kept of quantities purchased and sold, and no account of the sales is submitted to the board. The matter of inventory of forage on hand at the conclusion of the fairs has already been referred to in an earlier part of this report."

In the forage department we employ a competent superintendent, who looks after the receipts from the sale of forage. As these sales are practically all cash sales they are all recorded on a cash register at the time the sale is made. At the close of each day's business the superintendent takes the reading from his cash register and deposits the amount called for by the register for that day's sales with the treasurer and takes his receipt therefor. The disbursement book carries a special column showing amount paid for all forage. The claims on file show the number of tons of hay and straw purchased. They also show the number of bushels of oats and corn purchased. At the close of the fair a statement is made up showing the exact number of pounds of hay and straw purchased; also the number of pounds of mill feed purchased. As I previously explained, no inventory is made at the close of the fair, as practically all of the forage is sold except that returned to the milling company for which credit is received.

"Dairy Department, Sales of Ice Cream, Etc.—The amount included under this caption represents the net proceeds of the sales of ice cream, etc., during the fair, and the only evidence in support of the receipts entered on the records are the statements of the sales and purchases and expenses, rendered by the superintendent of this department. We understand the daily takings are recorded on a cash register, but no effort is made by the board to verify the correctness of the statements as rendered by the superintendent."

The ice cream stand in the dairy building is conducted by the management, with the superintendent of the dairy department in charge. The sales and collections are made the same as any other stand on the grounds and at the close of business each day the superintendent deposits his rereceipts with the treasurer and take a receipt therefor. Possibly we might figure out how many dishes of ice cream there are to the gallon and charge the superintendent in charge with that amount and hold him accountable. Even at that, he might give some of his patrons short measure and beat the department out of a few cents were he so inclined. However, as yet the management of the Iowa State Fair has not subscribed to their opinion that everyone is a thief until he proves himself otherwise. This particular department is under the supervision of Mr. W. B. Barney, food and dairy commissioner, appointed by the governor of the state of Iowa and by virtue of his office is an ex-officio member of this board and is held accountable for the department over which he has supervision.

"Ticket Sales: We found it impossible to verify the amount of the ticket sales for the year 1911, as the tickets issued but not sold have, we are informed, been destroyed. We are, however, also informed that an examination of the ticket sales for that year was made by the ticket audit committee, but no record of the result of such examination has been submitted to us. We have made a thorough examination of the ticket sales for the year 1912 and find the following discrepancies in the number of tickets returned as unsold to the secretary.

Day admissions, 50c each; 500 short; value........	$250.00
Children's admission, 25c; 10 short, value..........	2.50
Half-fare admission, 25c each; 10 short, value......	2.50
Bleachers admission, 25c; 9 short, value..........	2.25
	$257.25

Regarding the inability of the efficiency engineers to verify the amount of ticket sales for 1911 for the reason that the unsold tickets had been destroyed for that year, will say that if we had anticipated this investigation the tickets might well have been kept intact. However, we are of the opinion that when the ticket auditor counts the tickets returned unsold and gives the treasurer a receipt therefor, as far as the treasurer is concerned the transaction is closed. The records in the ticket auditor's book for 1911 clearly indicates the number of tickets turned over to the treasurer and the number returned unsold. I can see no reason for the accusation that this record is not complete in every particular.

In regard to the tickets returned by the treasurer for the year 1912, the engineers would have you believe there was a shortage of $257.25 in accounting for the number of tickets returned unsold by the treasurer. Rules 41 and 42, published in our premium list, provide as follosw:

"41. The superintendent of tickets shall issue to the treasurer all paid tickets of admission, taking his receipt therefor. He shall enter upon his book the number of tickets delivered and their amount, and credit himself with what tickets are returned unsold.

"42. The treasury department shall sell all paid admission tickets at such places and at such time as the board or executive committee may direct. He shall return all unsold tickets to the superintendent of tickets and take his receipt therefor, not later than noon of the day following the close of the fair."

These rules have always been complied with to the letter. Last year I was present when the unsold tickets were counted and turned back to the auditor of tickets, and I veried the count and the ticket auditor issued a receipt therefor in my presence. As far as the responsibility of the treasurer is concerned for the number of tickets sold, it ceased the minute the ticket auditor signed this receipt and turned it over to him.

A day or so after the close of the fair we instructed our superintendent of grounds to bring to the office all of the unsold admission tickets so that we could take out samples and have the balance destroyed. These tickets are always destroyed for fear they might fall into strange hands and an attempt be made to use them at succeeding fairs. As I stated before, the minute these unsold tickets have been counted back by the treasurer and audited by the superintendent of tickets, and the superintendent has given the treasurer a receipt therefor, this is accepted as settlement with the treasurer. Do you think for a minute that the treasurer would accept a count of these tickets as found by these engineers, and after the tickets have laid around this office for six months with no more care or protection than so much waste paper? I might say also that the engineer who checked these tickets over exercised no care whatever. The tickets were spread over the table in the outer room for three or four days and who knows but he or some other party got away with some of them.

For example: If you were to go into any bank in this city and cash a draft or check and the cashier counted out the money, and you counted it over in his presence and accepted it as correct, put the money in your pocket, and in the next week or so in counting it over you discovered that you were short $10, do you think for a minute if you were to go back to the bank that the cashier would correct this supposed error? The efficiency engineers were appraised of all of these facts, but they insisted on checking back the unsold tickets, for what reason I do not know, unless it was for the lack of other things to criticise or to give employment for three or four days to one or two of these $15 per day men.

"The expenditure included hereunder for fair grounds department represents the labor employed thereon, and the classification thereof is as per the records as derived from the actual pay rolls. The supervision and employment of all labor represented thereby comes within the duties of the superintendent of grounds, whose O. K. as to rate of pay and the amount of wages earned by the individual employes is accepted by the board, but we are informed that reports as to all labor requirements and conditions are submitted by the superintendent thereto. The pay rolls with accompanying vouchers have been produced to us, and we find that the O. K. of the superintendent has not been made on the individual time tickets of the employes in certain cases. The amounts stated to have been earned by the employes as per the pay rolls are in agreement with the amounts paid therefor, but, other than the supervision exercised by the superintendent, no effort is made to ascertain if the department derives all the benefits which should accrue in this connection."

The pay roll in the grounds department is handled as follows: The superintendent of grounds employs the laborers on the grounds, fixes their salary at an amount agreed upon by the executive committee. He furnishes the secretary with semi-monthly individual time slips for each man employed. This time slip shows the number of days and hours employed and where employed; also rate of wages paid. These slips are O. K.'d by the superintendent and brought to this office and the pay roll is made up from them, showing the distribution and cost of the service for improvements made at the grounds. Pay roll checks are then issued and turned over to the superintendent or timekeeper and in turn handed out to the employes.

The superintendent of grounds is employed for the explicit purpose of supervising the work on the grounds and to see that employes put in full time. We have had no reason to believe but what he has faithfully performed the duties entrusted to him.

I wish to say that the executive committee keeps in close touch with all work done at the grounds, and it has been customary for the secretary to stay nights at the grounds from June 1st until the close of the fair, which enables the office to keep in close touch with all the help employed on the grounds and with the improvements being made.

The management resents the statement of the efficiency engineers that no effort other than the supervision exercised by the superintendent is made to ascertain if the department derives all the benefits which should accrue in this connection.

"Collections—Use of grounds, which include stall and pasture rent; lumber sales; rental of grounds, who collects such items. The records do not provide any check upon the amounts so collected, and owing to the lack of a proper accounting system, it is impossible to state whether all collections have been properly accounted for."

Referring to fair ground collections turned in to the treasurer by the superintendent of grounds, you would be led to believe by the report of these engineers that absolutely no record was made of these collections. The superintendent of grounds has numerous duties to perform and for that reason the records he is required to keep are made as simple as possible. A stall and pasture book is kept by the superintendent showing the number of horses furnished stalls; also the number of cattle in pasture. These rentals are collected and deposited with the treasurer at stated periods. At the time collection is made a receipt is issued by the superintendent to the party making the payment and credit is given on the stall rent book. Similar receipts are also issued for cash received from sale of old lumber, kindling, etc. These receipts are numbered consecutively and are made in duplicate. At the close of the fiscal year the superintendent makes up a statement of all his collections on the grounds, showing the source from which the receipts were derived, and files it in this department along with the duplicate receipt issued for each individual collection.

"The amount of the interest on the monthly balances has not been verified by us, as no monthly statements are issued to the department by the Iowa Trust and Savings Bank and the department accepts the amount accredited without question."

Regarding interest on bank account, the department receives 2 per cent on the average daily balance, providing it is in excess of $5,000. At the end of each month interest is figured by the deputy treasurer of this department and credited to the account of G. S. Gilbertson, treasurer. This is handled by the bank in exactly the same manner as savings and other accounts of individual depositors. We have the privilege, and have taken occasion to verify the interest several months when the account was large, and have always found the proper amount credited to the account. In our dealings with bankers we have found them to be honorable gentlemen, as well as experts at figuring interest, and we are not much concerned about any discrepancies from this source.

"Per Diem and Mileage Charges—In Appendix III we present a statement of the department for out-of-state meetings during the periods under review, and in all cases the actual charges are less than the amounts allowable by law. In Appendix IV we present a statement of the amounts paid to members of the board, officials of the department and the department superintendents at the State Fair; and the amounts included therein comprise the whole of the per diem and mileage payments for the twelve months ended November 30, 1912, and November 30, 1911."

Under this heading I wish to advise that we furnished the engineers with a detailed statement setting out the expense account of the various members of the board for attending meetings at points other than at Des Moines and the amount they would be allowed under the law. The aggregate amount allowed by law, which is $4 per day and mileage five cents per mile each way, in excess of the amount charged by members in 1911, was $411.80; in 1912, $350.81. However, we failed to find anything in the above paragraph setting forth the amount saved the state through the generosity of the members of the board.

"Conclusions and Recommendations—The Board of Agriculture is responsible and presumably accountable for assets of approximately $800,000 in value, and also for the administration of the State Fair funds, which now amount to nearly $200,000 annually; yet, as this report demonstrates, when called upon to render an account of its stewardship, it is a matter of impossibility to prepare a true and correct statement of the financial position without recourse to an appraisal and inventory, and in addition the records of the administration of the State Fair are of such a nature as to preclude any satisfactory verication thereof."

With reference to the inventory, I am frank to say there has never been an inventory or appraisal of the grounds and buildings, and for that reason we have never attempted to show on our accounts the assets and liabilities of the State Fair. The engineers would have you believe that we absolutely had no idea of the cost of the permanent buildings or anything else at the grounds; yet, under Schedule "1" on page 1956 they have used the exact figures from our ledger account to show the total value of grounds and permanent improvements up to November 30, 1912.

One of the first things I told the engineers when they came into the office was that I hoped they would recommend that the board employ some one to appraise the value of the grounds and also the permanent buildings, in order that we might show each year the exact assets of the department.

Regarding the statement: "the records of the administration of the State Fair are of such a nature as to preclude any satisfactory verification thereof" I wish to say that this is simply a broadside, malicious statement, without anything submitted to back it up. We found it difficult to produce evidence that was satisfactory to these gentlemen in a number of cases; for instance, they have stated previously in their report, under the head of stall and pen rent collected, that the receipts were not properly vouched, when we produced copies of the receipts issued to the parties paying for pens, a committee book of the superintendent of the respective department showing the number of stalls or pens occupied by the exhibitor, and duplicate receipts from the treasury showing the deposit had been made, all of which corresponded as to the amount. If this is not satisfactory evidence to verify the collection in these departments possibly they have grounds for making this sort of statement.

We find the following statement regarding the accounting methods in this department:

"The accounting methods are of the crudest description and no commercial concern could continue to exist under similar conditions. The only attempt at bookkeeping is comprised in chronological records of receipts and payments. No ledger accounts are kept of the assets created by the expenditures on permanent improvements, and prior to 1910 (see Schedule '2") no distribution of material and labor, expended by the board itself under this caption, has been made in the records.

"Speaking generally the records kept in the department fail entirely to provide the necessary data and information whereby the due accounting of all income can be properly assured; and also whereby the consideration, which is presumably obtained for all disbursements, can safely be said to have been enjoyed solely thereby."

I think I am safe in saying that you will not find one out of ten business houses in the state of Iowa that keeps a more accurate account of the receipts and disbursements than are shown by the books in this department. It is very peculiar that if the plan under which we operate has been so slack that the fair has been successful and enjoyed the healthy growth it has from year to year. It is also strange that the leading agricultural papers of America hold up the Iowa State Fair as a model for others to pattern after. It is also peculiar that state fair managers from practically every state fair in the Union have visited the Iowa State Fair to take home our methods of doing business and conducting a state fair so that they might make their fair greater and more successful.

The engineers fail to comprehend that the account for the receipts and disbursements for the State Fair is the most important point to be looked after. No one is going to run away with the grounds or with the buildings thereon, and if we have close supervision over the receipts and disbursements of the fair there is not going to be a very great loss from other sources.

Referring to the tabulation of disbursements with reference to salaries, supplies, printing and binding furnished the department by the state of Iowa we find the following comment:

"None of the above disbursements are entered in the records kept in the department. Therefore, while a net income of some $40,000.00 is being realized annually the state is at the same time subsidizing the department to the extent of $14,500.00 per annum."

I wish to say regarding the records of these accounts that they are kept in a book designed and furnished by the Secretary of the Executive Council and in accordance with his wishes. All of which the examiners had access to. Therefore we see no reason for the statement:

"None of the above accounts are entered in the records of the department."

I note the engineers have listed in this statement $13,430.00 aid due farmers' institutes and short courses. The department of agriculture receives absolutely no benefit from the amount of state aid paid the farmers' institutes and short courses. The only duties we have in connection therewith are to audit the reports of these organizations and certify the same to the auditor of state, who issues state warrant and forwards it to the county treasurer in the county in which the organization is located. I see no reason why the engineers should not have added in this statement the amount appropriated to county and district fairs, which amounts to $40,000 for the biennial period, as the reports are taken care of in the same manner by this department, and made the statement that the state was subsidizing the department of agriculture to the extent of $34,500.00 per annum instead of $14,500.00.

I have prepared a statement showing amount of salaries and amount paid by the State of Iowa for printing, binding, and supplies used by the department of agriculture for a period of six years. I find this varies very little each year and the average for six years is $7,144.00 per annum instead of $14,500.00 as the efficiency engineers would have you believe. We also find the following valuable advice given the members of the House and Senate:

"The department of agriculture is a revenue producer, owing principally to the state fair and the division of horse breeding fees, and it is therefore a question to be decided by the House and Senate, whether or not it is entitled to annual appropriations for salaries or for any other purpose."

The gentleman who wrote this report admitted to me that he had never been on a state fair grounds but one-half day in his life and that was a rainy day; also that he had never checked a set of fair books until he came to this department. Yet, after six weeks spent in this office, delving into the records, he comes forth with this invaluable advice to the legislature. If the gentleman had seen fit to invesitgate the amount appropriated for other state fairs he would have found that every state fair in America that is really on the map has been subsidized by state appropriations ranging from $350,000.00 to $2,000,000.00, the latter amount being appropriated some six years ago to entirely rebuild the New York State Fair Grounds.

I wish to quote you the opinion of a state fair manager who has been in the business some twenty years, and who is now recognized as the best authority on these matters of any man in America, and who at the last meeting of the American Association of Fairs and Expositions was honored by being elected President of said association:

"The State Fair is not an institute peculiar to the State of Iowa, any more than is its university, normal or farm schools; for state fairs, like the other institutions mentioned, are now maintained as a part of the educational system in practically all of the leading agricultural states. Therefore, Iowa is only keeping in the van of progress with its State Fair.

"The continued success or failure of the State Fair to fulfill its purpose and mission will depend largely upon the consideration given it at the hands of this and future legislatures, for no matter how capable and efficient your board of managers may be, or how hard they may work to direct the affairs of the institution along right lines, they will be able to accomplish only such good as they can with the tools and equipment provided them. To illustrate: They can hardly be expected to build up a great annual livestock show without adequate and proper equipment for housing and showing; nor can they be expected to get the best exhibits and results from any one of the several exhibit divisions of the fair unless they have the buildings to properly display these exhibits. Neither can the greatest financial results be obtained without suitable accommodations to properly care for those who attend.

"We believe in the policy of the legislature looking well after her institutions, and commend the work of the legislatures in the past for their liberality shown towards them. But we cannot conceive how any right thinking men or set of men can deal with other state institutions and consider carefully their needs, and leave the one institution that is closer to the people than any other without providing funds for its betterment. We are often told that the State Fair should be self-supporting; that state funds should not be required for its improvements and up-keep. Why not ask the same of the state university and farm schools? The fact remains that the State Fair, insofar as the actual expense of the fair is concerned, is self-supporting, and more than so, having for years returned a net profit that has been put back into improvements and betterments of the State Fair grounds property. In this respect alone, if by no other, it differs from the other state educational institutions as the others contribute little, if any, to their own support or betterment."

I leave you to draw your conclusions whether the advice of the former or the latter is the most valuable and reliable.

"The only specific information published in reference to the operations of the department is contained in the printed annual financial statement, which is necessarily misleading as it is compiled from the receipts and payments of the particular period, irrespective of whether they are properly applicable thereto; and is also erroneous in several respects—no distinction being made between disbursements for repairs and disbursements for permanent improvements, and in addition receipts in respect of the sale of assets are included as income, thus unduly inflating the net income for the fiscal year."

It is rather a hard matter to answer the accusations made in the above paragraph for the reason that the engineers simply say the financial statements published by this department are misleading. They do not attempt to point out any specific instances but make a broadside statement to this effect. They also say the statements are erroneous in several respects. We are not aware that errors are on our books and they did not point them out to us. We are at a loss to know why such accusations should be made and printed in a public document without substantiating same with a few facts. The engineers also state no distinction is made between disbursements for repairs and disbursements for permanent improvements; yet on page 1965, under schedule "7" they have copied the statement from our balance book in 1912 for the itemized account for money spent for maintenance and repairs to grounds and buildings; they also state the receipts from the sale of assets are included as income, thus unduly inflating the income for the fiscal year. The receipts received from old lumber are carried in the accounts for "receipts other than fair" and in no way enter into the accounts which determine the profit or loss of the fair.

Regarding the recommendations of the efficiency engineers the Committee on Retrenchment and Reform have saved us the trouble of making any comment on recommendation No. 1, for in accordance with their report they have already placed it in the discard. However, it might be well to comment on this as it exemplifies the judgment of these gentlemen on fair matters. They recommend that the Board be reduced to seven members, thus reducing expense and curtailing per diem and mileage. To do this it would disenfranchise four districts of the State and leave them without representation on the Board. Each member of the Board has supervision over a department of the fair and his compensation is $4.00 per day and mileage. If we would attempt to hire superintendents it would be utterly impossible to hire men who would take the interest in the department that is now shown by the directors; on the other hand instead of curtailing the expense it would more than double it; for instance, when Mr. Brown was vice-president of the board and superintendent of concessions he was paid $4.00 per day for his services, which cost the department $275.00 for the year 1910. When he went off the board and the management hired him to superintend that department they were obliged to pay him for his services and it cost them in the neighborhood of $600.00. At that the board felt they were fortunate in securing his services at this figure.

I also wish to add that in 1910 Mr. Brown served as Superintendent of Concessions of the Oklahoma State Fair and for thirty days' services he received $500.00 and expenses. The total receipts of the concessions department at the Oklahoma Fair were about $12,000, while at Iowa the receipts last year were in excess of $24,000. He also served in the same capacity at the Denver fair and received $500.00 and expenses for his services.

MEETING STATE BOARD OF AGRICULTURE.
APRIL 9, 1913.

The board convened at 2:00 p. m. with the following members present: Cameron, Olson, Corey, Johnston, Reeves, Curtin, Wentworth, Summers, Mullen and Pike.

The secretary presented the following revision of the premium list for the approval of the board; these revisions having been made in accordance with action taken by the board at the annual meeting in December and by recommendations of the superintendents of the various departments.

HORSE DEPARTMENT.

Mare and foal—Percherons	$25	$15	$10	$5	$55	
Mare and foal—Clydesdale	25	15	10	5	55	
Mare and foal—Shire	25	15	10	5	55	
Mare and foal—Belgian	25	15	10	5	55	
Mare and foal—Standard Bred	15	10	5	3	33	
						$253

Stallion, mare or gelding any age, three gaited-combined harness and saddle horse, $50, $35, $25, $15, $10	$ 135.00
Hunters and high jumpers (New class)	575.00
Military horses (New class)	105.00
Increase	$ 1068.00
Decrease in mule classification	25.00
Net increase in horse department	$ 1043.00

CATTLE DEPARTMENT.

Dairy short horns—to duplicate money offered by the Short Horn Association	$ 200.00
Hereford—to duplicate increase offered by Hereford Association	200.00
Dutch Belted—new classification, associations to offer $200	547.00
Galloway	92.00
Ayrshire	110.00
Brown Swiss	110.00
Total increase	$ 1259.00
Decrease in fat cattle section	4.00
Net increase	$ 1255.00

SWINE DEPARTMENT.

Authorize the appropriation of $125.00 for Poland China Futurity for yearling pigs as per agreement of the board with the Chicago Daily Live Stock World last year	$ 125.00
Also add $150.00 for Poland China Futurity for spring pigs and litters, providing the Poland China Association and the Live Stock World add a sufficient amount to the spring pig futurity to make the amount offered equal to that offered for yearlings at this year's show	150.00
Total increase	$ 150.00

SHEEP DEPARTMENT.

Cut classification for Leicesters $64.00 and add that amount to Lincolns.	
Offer two cups, value $20.00 each, one for best ram any age bred by Iowa exhibitor and one for best ewe any age bred by Iowa exhibitor.	
Total increase	$ 40.00

POULTRY DEPARTMENT.

Classes for Barred Plymouth Rock, pullet bred and cockerel bred	$ 42.00
Eight cups for best cockerel and best pullet in four breeds	80.00
	$ 122.00
Premiums reduced on ducks	10.00
Total increase	$ 112.00

AGRICULTURAL DEPARTMENT.

Potatoes	$ 25.00
Field or stock vegetables	78.00
Increase	$ 103.00
Cut out of classes for vegetables	12.00
Total increase	$ 91.00

HONEY AND BEES, ETC.

Increase in classification	$ 116.00

FRUIT DEPARTMENT.

Increase on plate exhibit	$ 320.00
Increase in ornamental design in fruits	25.00
Total increase	$ 345.00

FLORICULTURAL DEPARTMENT.

Classification increased	$ 191.00

SUMMARY OF TOTAL PREMIUMS OFFERED AT THE IOWA STATE FAIR AND EXPOSITION 1913, SHOWING INCREASES OVER THOSE OFFERED IN 1912.

	Offered by Department 1913	Offered by Department 1912	Increase by Department
Horses	$ 15,286.00	$ 14,243.00	$ 1,043.00
Speed	15,700.00	15,250.00	450.00
Cattle	12,512.00	11,257.00	1,255.00
Swine	4,305.00	4,155.00	150.00
Sheep	2,788.00	2,748.00	40.00
Poultry	2,101.00	1,989.00	112.00
Agriculture	4,201.00	4,110.00	91.00
Pantry and kitchen	828.50	828.50	....
Apiary	411.00	295.00	116.00
Dairy	657.00	657.00	....
Horticulture	1,827.75	1,482.75	345.00
Floriculture	1,470.00	1,279.00	191.00
Fine Arts	1,862.50	1,862.50	....
Work of children	170.50	170.50	....
School exhibits	968.00	867.00	101.00
Dog show	1,000.00	1,000.00	....
Babies' Health Contest	280.00	280.00	....
Scholarships	650.00	650.00	....
College exhibit	800.00	800.00	....
	$ 67,818.25	$ 63,924.25	$ 3,894.00

Mr. Wentworth moved that the revision of the premium list as read by the secretary be approved. Motion seconded by Mullen and carried unanimously.

The president appointed Messrs. Johnston, Pike and Reeves as committee on per diem and mileage.

April 8-9, 1913.

Mr. President:

Your committee on per diem and mileage beg to report as follows:

Name	Days	Rate	Amount	Miles	Amount	Total
No. 10237 C. E. Cameron...	3	$4.00	$12.00	140	$14.00	$25.00
No. 10238 O. A. Olson......	3	4.00	12.00	155	15.50	27.50
No. 10239 R. S. Johnston...	3	4.00	12.00	158	15.80	27.80
No. 10240 Elmer M. Reeves.	3	4.00	12.00	113	12.30	24.30
No. 10241 E. J. Curtin......	3	4.00	12.00	195	19.50	31.50
No. 10242 E. M. Wentworth.	3	4.00	12.00	60	6.00	18.00
No. 10243 Chas. F. Curtiss..	2	4.00	8.00	37	3.70	11.70
No. 10244 J. F. Summers...	3	4.00	12.00	160	16.00	28.00
No. 10245 Jno. P. Mullen....	3	4.00	12.00	117	11.70	23.70
No. 10246 H. L. Pike........	3	4.00	12.00	206	20.60	32.60

Respectfully submitted,

R. S. Johnston,
H. L. Pike,
E. M. Reeves.

Mr. Reeves moved that the report of the committee on per diem and mileage be adopted. Motion seconded by Wentworth and carried.

LEGISLATIVE COMMITTEE MEETING.
APRIL 10-18, 1913.

Members present on April 9 and 10: Cameron, Olson, Corey, Mullen and Curtin.

Members present on April 11-12-13: Cameron, Corey, Curtin.

Members present April 14-18: Cameron, Olson, Corey, Curtin. Member Mullen joined the committee on April 15, 17 and 18.

The purpose of this meeting was to look after legislation pertaining to the department, railroad rates for the state fair, and appropriation bills pending before the legislature.

The executive committee decided to accept the offer of Fischer's Burlington band (25 musicians) for a six day engagement at ten hundred and fifty dollars ($1,050.00) and the secretary was instructed to draw up contract.

EXECUTIVE COMMITTEE MEETING.
APRIL 25, 26, 27, 28, 1913.

Committee met April 26th with Cameron, Olson and Corey present. The purpose of the meeting was to work out plans for the women and children's building and to decide upon the location for same.

The location for the building was not decided upon until April 27th, when member Curtiss joined the committee. It was decided to locate the building on the present site of Rest Cottage, extending across Capitol avenue, with main entrance facing west. The location to be approved by the board at a later date.

The preliminary sketch was gone over by the committee and architect and a number of changes were made. The architect was instructed to proceed with the plans and get them out at the earliest possible date.

The committee visited the grounds on Saturday in company with Mr. Cooper and Mr. Howard, who are in charge of laying the game preserve. The committee decided to include in this preserve the meadow east of timber and extending to south line of fair grounds and as far east as the jog in the east and west line fence, and north to road leading through camp grounds. The ground set aside for this preserve to consist of approximately twenty acres.

The committee agreed to move the old vice president's office to a location on the hill within this preserve designated by the committee and to have the same sided and lathed and plastered; also to provide a cellar under same. Also tap water mains at point on hill in camp grounds and bring water to fish pools and to game keeper's quarters. The fish and game department to furnish all material to construct a seven-foot fence around the entire preserve, and to furnish all material and pay all the expense of constructing feed house, breeding pens, hatching coops, fish pools, etc., in connection with preserve.

The fence along south and east line fence to be set in 32 feet to allow for driveway outside of same.

The secretary was instructed to employ an engineer to stake out the women and children's building in accordance with location selected and to have the ground cross-section for the purpose of determining the amount of dirt to be moved in preparing site and making excavation for building; also have street extending along in front of the agricultural building, and south back of cattle barns staked preparatory to having same put to grade this year.

The secretary was also instructed to make arrangements with Wesley Greene for planting plants and flowers again this year. Flower beds to be added near street car entrance and block south of administration building. About $350.00 to be spent for plants and bulbs in addition to services of Mr. Greene.

Propositions for bands, orchestras, and for the Philharmonic choir were considered. The committee accepted the proposition of Henry and His Band, consisting of 40 musicians, including vocal soloist, Virginia Rankin, at $1,550.00, the engagement to be for seven days, three concerts daily, and to furnish string accompaniment for choir Sunday evening, August 24th.

The committee also accepted the proposition for Graham's orchestra for sixteen pieces, two concerts daily, for six days at $436.00. Also the proposition made by Dr. J. I. Gibson and Frederick Vance Evans for the Philharmonic choir, to consist of 150 voices and soloists, to give a concert in the stock pavilion on Sunday evening, August 24th, for the sum of $525.00.

The secretary was directed to execute contracts for the above organizations.

EXECUTIVE COMMITTEE MEETING.

MAY 7, 1913.

Committee met with members Cameron, Olson and Corey present.

In accordance with previous arrangements the executive committee met with the committee on retrenchment and reform to discuss the matter of issuing free tickets to the state fair.

After the matter had been thoroughly discussed the committee on retrenchment and reform adopted the following resolution regulating the issuance of free tickets:

Be It Resolved by the committee on retrenchment and reform that the State Board of Agriculture be instructed not to issue any free passes during the state fair except that the board in its discretion and under strict and proper regulation, may issue free admission to the following persons:

The officers and members of the State Board of Agriculture and employes of the state fair, including those actually employed for attraction and entertainment.

Exhibitors who pay $2.00 for exhibitor's ticket, and their actual employes and helpers.

Concessionaires and their actual employes and helpers.

Weather and crop observers appointed by the director of the Iowa Weather and Crop Service Bureau.

Officers of other state fairs and the president and secretary of the county and district fairs in Iowa that receive state aid.

Newspaper publishers and reporters actually engaged in reporting the fair.

Old soldiers for one day during the fair.

Children under 15 years of age for one day during the fair, but nothing herein shall be construed to prohibit the free admission of children under 8 years of age, or the granting of reduced rates to children under such rules as the board shall prescribe.

Pioneers for one day during the fair.

The secretary presented the bill for per diem and mileage of the board members who attended the meeting called by the committee on retrenchment and reform on February 22, 1913, with the request that the same be paid by state warrant. The committee stated they had no funds from which these witness fees could be paid and that the same should be paid from state fair receipts.

The claims were ordered paid by the executive committee.

The committee in company with the superintendent of grounds visited the grounds and agreed upon the following locations for old buildings to be moved this year.

Move three old office buildings back of agricultural buildings and old building used for fruit stand across street from stock pavilion to location on hill north of road leading through camp grounds and east of plat of ground occupied by Seick Tent and Awning Company.

Move hospital to location just south of weather and crop building.

Move post office to location between telephone building and U. S. Gypsum Company building.

Move check stand to location in camp grounds to be used for storage of straw and forage for campers.

Move old Rest Cottage to location west of college building where art hall stood at one time and use same for art hall or school exhibits, to be decided later.

The Superintendent of Grounds was instructed to purchase a set of trucks and proceed to moving above buildings. In case superintendent is unable to buy a second hand set of trucks purchase three trucks from the LaPlant Tool Company, Marshalltown, Iowa, including bolster at $250.00.

The superintendent was also instructed to take down old green house and dispose of glass salved from same.

The superintendent was instructed to have the following roofs painted: brick horse barn, stock pavilion, swine pavilion, and street car station.

The president appointed Mrs. Mary T. Watts, Superintendent of Babies' Health Contest for 1913 fair.

The recommendation of the secretary to send Mr. Whitney out on the Commercial Club Excursion, May 13-14-15 was approved. Expense of trip to be $37.50.

The communication from D. O. Lively, Chief of the Department of Live Stock, Panama-Pacific Exposition, relative to tent space at the 1913 fair was brought to the attention of the committee. The request was granted.

The application of The Jenkins Company for use of track for Motor Cycle races the latter part of May was brought to the attention of the committee. Application not granted.

MEETING OF STATE BOARD OF AGRICULTURE.
MAY 16-17, 1913.

Meeting was called to order with President C. E. Cameron in the chair, May 16, at 10:30 a. m. Roll call showed the following members present: Cameron, Olson, Corey, Johnston, Reeves, Curtin, Wentworth, Sheldon, Pike.

Minutes of board meetings on December 12-13 and April 8-9, and all executive committee meetings were read. On motion of Mr. Pike, seconded by Mr. Sheldon, the minutes were approved as read.

The Secretary presented the following resolution adopted by the Committee on Retrenchment and Reform:

Be it Resolved by the Committee on Retrenchment and Reform, That the State Board of Agriculture be instructed not to issue any free passes during the State Fair, except that the board in its discretion, and under strict proper regulation, may issue free admission to the following persons:

The officers and members of the state board of agriculture and employes of the state fair, including those actually employed for attraction and entertainment.

Exhibitors who pay $2.00 for exhibitor's ticket, and their actual employes and helpers.

Concessionaires and their actual employes and helpers.

Weather and crop observers appointed by the director of the Iowa Weather and Crop Service Bureau.

Officers of other state fairs and the president and secretary of the county and district fairs in Iowa that receive state aid.

Newspaper publishers and reporters actually engaged in reporting the fair.

Old soldiers for one day during the fair.

Children under 15 years of age for one day during the fair, but nothing herein shall be construed to prohibit the free admission of children under 8 years of age, or the granting of reduced rates to children under such rules as the board shall prescribe.

Pioneers for one day during the fair.

The Secretary presented the following:

STATEMENT OF RECEIPTS AND DISBURSEMENTS OF THE IOWA DEPARTMENT OF AGRICULTURE FOR THE PERIOD FROM DECEMBER 1, 1912, TO APRIL 25, 1913, INCLUSIVE.

RECEIPTS.

Cash balance Dec. 1, 1912		$ 615.63
Receipts from sources other than Fair:		
Fees, division of horse breeding	$ 7,302.00	
Collections by Supt. of Grounds	566.18	
Balance on house sold 1912	19.00	
Miscellaneous collections by Secretary	28.80	
Light plant salvage	51.00	
Receipts on account 1912 fair	6.00	
Rent for use of poultry cooping	150.00	
Bills payable	3,000.00	
Total receipts from sources other than fair		11,122.98
Receipts of Fair:		
Privilege department	$ 200.00	
Suspensions, speed department	32.10	232.10
		$ 11,970.71

DISBURSEMENTS.

Disbursements other than Fair or Improvements:		
Clerical help, division of horse breeding	$ 1,485.75	
Expense on account of 1912 Fair	253.74	
Expense annual meeting and state agricultural convention	484.00	
Insurance premiums	150.00	
Drayage on cooping rented	32.00	
Salaries and expense publicity department	629.97	
Miscellaneous expense	68.25	
Crops—rented ground	6.00	
Total disbursements other than Fair or improvements		$ 3,109.71

Expense of Fair:		
Executive committee meetings	$ 633.00	
Special committee meetings	898.78	
Express, telegraph and telephone	20.95	
Postage	170.00	
Printing	2.00	
Advertising	50.00	
Supplies, stationery, etc.	118.50	
Salaries charged to fair	765.00	
Board meetings charged to Fair	251.10	
Expense privilege department	28.00	
Miscellaneous expense on account of Fair	4.00	
Plants and flowers	9.10	
Total expense of fair		2,950.43
Improvements:		
Cinders for streets	434.25	
Cement for walks	4.40	
Miscellaneous improvements, balance on 1912 lumber bill	465.72	
Horse barn (on contract)	2,000.00	
Expense on account of additional land	63.47	
Administration building	30.00	
Miscellaneous grading	27.82	
Trees and shrubs	12.00	
Game preserve	.60	
		3,038.26
Maintenance of Grounds and Buildings:		
Supt. and assistant, salary	$ 569.53	
Track work	164.80	
Fence repairs	4.50	
Repairs to water system	4.32	
Water	13.29	
Hauling manure from speed barns	57.50	
Keeping of mule and horse teams	47.94	
Implement and harness repairs	2.00	
Streets, dragging	8.65	
Repairs to drains	20.75	
Miscellaneous maintenance	98.39	
Total maintenance		991.67
Total disbursements		$ 10,090.07
Balance on hand April 30, 1913		1,880.64
To balance		$ 11,970.71
Balance on hand April 30, 1913		$ 1,880.64

Secretary presented the following statement of estimated receipts and disbursements other than fair:

Fees, division of horse breeding	$ 9,500.00	
Collections by Superintendent of Grounds	1,500.00	
Use of poultry cooping	150.00	
Receipts account of 1912 fair	253.00	
State appropriation for insurance	1,000.00	
Miscellaneous receipts	327.00	
Total receipts other than fair		$ 12,730.00

Estimated expense other than maintenance or improvements to November 30, 1913:

Clerical help, division of horse breeding	$ 2,100.00	
Printing 1912 report and miscellaneous expense	400.00	2,500.00

Expense Publicity Department other than for Fair:

H. N. Whitney, six months salary	$ 1,000.00	
Stenographer, six months salary	450.00	
Printing six editions "Greater Iowa," 7,500 each	485.00	
Postage on six editions "Greater Iowa"	32.00	
Cuts and electros	50.00	
Postage on 20 news letters of 400 each	80.00	
Miscellaneous printing and pamphlets	303.00	
Total publicity department		$ 2,400.00
Expense on account of 1912 fair	$ 250.00	
Expense annual meeting and state agricultural convention	484.00	
Expense board meeting with Committee on Retrenchment and Reform	296.00	
Insurance premiums paid and due before close of year	2,300.00	
Miscellaneous expense	500.00	
Total expense		$ 8,730.00
Balance available for improvements		4,000.00

Mr. Johnston moved that the secretary's salary be fixed at $2,200.00 per annum, effective from April 23, 1913, in accordance with House File No. 223, Acts of the Thirty-fifth General Assembly. Motion was seconded by Mr. Sheldon and unanimously carried.

The secretary presented the following resolution adopted by the Des Moines Automobile Dealers' Association:

Des Moines, Iowa, May 13, 1913.

Pursuant to a resolution adopted by the Des Moines Automobile Dealers' Association at its meeting held May 8th, 1913, we, the undersigned, agree and bind ourselves not to exhibit, either singly or collectively, at the Iowa State Fair of 1913, unless released by the committee, composed of Schooler and Van Vliet, who are authorized to intercede for and in behalf of the automobile exhibitors. This is to insure us, as probable exhibitors, from the excessive rates charged by the Iowa State Fair Board for space used for automobile exhibitors.

(Signed by 32 dealers.)

Mr. Reeves moved that the rental of space under the grand stand for automobile exhibit be fixed at twenty cents (20c) per square foot for the 1913 fair. Motion seconded by Mr. Curtin and unanimously carried.

The secretary presented a copy of Senate File No. 212 making appropriation for a women and children's building on the state fair ground as follows:

S. F. NO. 212.

An Act to provide for the erection of a women and children's building on the Iowa State Fair and Exposition Grounds, and to make appropriation therefor.

Be It Enacted by the General Assembly of the State of Iowa:

Section 1. The state board of agriculture is hereby authorized, empowered and directed to cause to be erected on the Iowa State Fair and Exposition Grounds a women and children's building at such location on said grounds as the said board of agriculture may select.

Sec. 2. There is hereby appropriated to the Iowa Department of Agriculture out of any money in the state treasury, not otherwise appropriated, for the purpose of erecting and furnishing said women and children's building the sum of seventy-five thousand dollars ($75,000.00). All moneys appropriated by this act shall be drawn from the state treasury upon warrants issued by the state auditor upon the order of the state board of agriculture.

Sec. 3. This act being deemed of immediate importance shall take effect and be enforced from and after its passage and publication in the Register and Leader and Des Moines Capital, newspapers published in Des Moines, Iowa.

Approved April 18, 1913.

The board adjourned to the fair grounds to inspect location of the women and children's building and to go over the list of improvements to be made from fair receipts.

MAY 17th.

Board met at 10 o'clock a. m. with President Cameron in the chair and the following members present: Cameron, Olson, Johnston, Reeves, Wentworth, Curtiss, Sheldon, Mullen, Pike and Corey.

Mr. Johnston moved that the executive committee be authorized to expend not to exceed $25,000.00 on improvements and maintenance of grounds and buildings out of anticipated receipts of the 1913 fair. Seconded by Mr. Wentworth. On roll call the vote was as follows: Ayes 10, noes 0. Motion prevailed.

Mr. Reeves moved that the executive committee be instructed to follow as closely as possible the list of improvements outlined in the following budget presented to the board and agreed upon during inspection of the grounds and buildings on May 16; the committee to use their best judgment in making improvements as authorized in the following budget and in accordance with the resolution offered by Mr. Johnston limiting expenditures for maintenance and improvements to $25,000.00. Seconded by Mr. Mullen. Motion prevailed.

ESTIMATE OF IMPROVEMENTS, 1913.

Expended from Dec. 1 to May 1 for improvements	$ 3,038.00	
Bills on file chargeable to improvements	811.00	
	$ 3,849.00	
Less cinder hauling charged to streets	434.00	
Total carried out		$ 3,415.00
To complete three sections of street car station:		
Steel for additional 80 feet	$ 1,400.00	
Cement floor and walks	400.00	
Miscellaneous labor putting in division fence, etc.	150.00	
Making fill	100.00	
Two new turnstiles	250.00	
Total		2,300.00
For constructing 4-foot storm sewer from south side of Machinery Hall to south fence; 960 ft. at $3.50 per foot		3,360.00
For installation of two batteries of closets in rooms provided in horse barn:		
840 ft. of cement floor at 7c	$ 60.00	
Installing 18 stools in each room, lavatories, urinals, etc.	1,750.00	
Two cesspools	150.00	
Total closets		1,960.00
Cement walks:		
From street car station to Rock Island Ave. on south side of street 840 ft.—continuation of brick walk on north side of same street to Rock Island Ave., 510 ft. Total, 1,350 lineal feet, 12 ft. wide, 16,200 sq. ft., at .09c		1,458.00
600 ft. of 12 ft. walk along east side of new street back of stock pavilion and leading up to the Women and Children's Building, 72,000 sq. ft. at .09c		648.00

Place all four chimneys in Administration Building on outside of building		200.00
Moving Rest Cottage to new location, putting in foundation, remodeling for Art Exhibit or School Exhibits Building. (If used for art exhibit, turn over old art building to school exhibits department for manual training exhibit)		300.00
Moving hospital to new location, putting in foundation and cesspool		100.00
Moving three old cottages now located back of agricultural building to new location east of poultry building		60.00
Moving old vice president's office and remodeling same for game keepers' lodge	325.00	
Extending water supply to game preserve	75.00	
		400.00
Moving closet south of Machinery Building to camp grounds, putting in vault, etc.		75.00
Moving dry closet near horse barn to camp grounds, putting in foundation, vault, etc.		200.00
Moving band stand to location south of Administration Building		25.00
Moving old street car entrance and rebuilding and fitting up same for dining hall		500.00
Remodel old Christian Church dining hall—take off old shed on east and put in more windows, paint outside and use same for floricultural exhibit		350.00
One hundred new lawn seats at $1.90 each		190.00
Street improvements:		
Cinders hauled during winter	434.00	
Opening street to game preserve and street back of stock pavilion and cattle barns	500.00	
10,000 gallons of road oil	550.00	
Other street improvements	350.00	
		1,834.00
One Studebaker street sprinkler for track		400.00
Poultry cooping:		
28—Sec. style G. 7 ft. 4 in.—205 ft. at $1.05	$ 215.00	
4—Sec. special 4 ft. 8 in.—19 ft. at $1.05	19.95	
Freight and installing	15.00	
Total poultry cooping		350.00
Painting farm house and barn	$ 150.00	
Painting roof of brick horse barns	200.00	
Painting roof of stock pavilion	110.00	
Painting roof of swine pavilion	65.00	
Painting roof of street car station	50.00	
Total painting		575.00

Miscellaneous improvements by Supt. of Grounds not enumerated above	1,500.00
Estimated cost of improvements	$20,200.00
Estimated cost of maintenance of grounds and buildings	3,600.00
Total estimated cost of improvements and maintenance	$ 23,800.00

Mr. Reeves offered the following resolution and moved its adoption; seconded by Mr. Mullen:

Resolved, That the state board of agriculture approve the location for women and children's building east of agricultural hall on present site of rest cottage and as indicated by corner posts located by the board on the 16th of May; and be it further

Resolved, That the board approve the plans for the women and children's building as submitted by O. O. Smith, architect; and be it further

Resolved, That the executive committee be and they are hereby authorized and instructed to advertise for bids as per plans submitted and in the manner agreed upon by the board for the erection of the women and children's building from the state appropriation of $75,000.00, as provided by Senate File No. 212, Acts of the 35th G. A.; and be it further

Resolved, That the executive committee be and they are hereby authorized to award contract or contracts for the erection and furnishing the women and children's building to the lowest responsible and advantageous bidder or bidders, limiting the total cost, including architect's and engineer's fees and furnishings, to the appropriation of $75,000.00; and be it further

Resolved, That the appropriation of $75,000.00, as provided in Senate File No. 212, shall be drawn upon orders of the state board of agriculture, signed by the president and secretary at such times and in such amounts as may be needed in payment of the work and material specified.

The above resolution was unanimously adopted.

Mr. Wentworth moved that the executive committee be authorized to make application for railway rates for the 1913 state fair and if same are not granted by the railroads the committee be authorized to make application to the Railroad Commission for same, and to take such further action as they may deem advisable; seconded by Mr. Johnston. Motion carried.

Mr. Johnston moved that the executive committee be authorized to represent the Iowa State Fair at the date conference to be held at St. Paul on May 21st to discuss dates for 1914 fairs. Motion prevailed.

Secretary presented the resignation of Edw. N. Wentworth as Superintendent of the boys' judging contest. Mr. Wentworth moved that the resignation be accepted and the selection of his successor be left to the executive committee. Seconded by Mr. Pike. Motion carried.

Mr. Wentworth moved that the advertising budget of $11,500.00 for the 1913 fair as presented by the secretary be approved; seconded by Mr. Curtiss. Motion carried.

EXPENSE OF ADVERTISING 1912 FAIR AND ADVERTISING BUDGET FOR 1913 FAIR.

		1912.	1913.
Country weekly papers, 1912, 464		$ 2,680.62	
Country weekly papers, 1913, 500			2,900.00
Plate for weekly papers, 464 pgs., cuts and proofs		597.03	
Plate for weekly papers, 500 pgs., cuts and proofs			700.00
Daily papers outside of Des Moines		207.23	400.00
Miscellaneous papers and magazines		165.36	100.00
Des Moines daily papers		1,093.08	1,200.00
Agricultural and live stock papers		1,152.00	1,200.00
Horse papers, advertising speed events		569.92	787.00
		$ 6,465.24	$ 7,287.00
Publicity Department:			
Ora Williams	$ 550.00		
Pay roll at grounds	83.50	633.50	
H. N. Whitney, 4 months	666.66		
Stenographer, 2 months	150.00		
Pay roll at grounds	100.00		916.00
Greater Iowa:			
1 issue 8,000—8 pages, 1 issue 5,000—8 pages, 3 issues 5,000—4 pages	242.80		
Postage on Greater Iowa	232.50	475.30	
5 issues 7,500—8 pages	404.00		
Postage on Greater Iowa	200.00		604.00
Miscellaneous hangers and window cards		446.37	500.00
Monthly calendar cards		60.00	91.00
125 M-2 color 8 pg. heralds		269.00	300.00
7,000 outdoor signs		174.50	175.00
Distribution of advertising matter		743.00	750.00
Billboard service		899.05	300.00
Cuts and electros		126.03	150.00
Photos		242.00	200.00
Miscellaneous advertising items		207.06	227.00
		$ 10,741.05	$ 11,500.00

Mr. Curtiss moved that O. O. Smith be allowed $750.00 as part payment for architectural work on women and children's building. Motion prevailed.

Orders for state warrants were signed by the president and secretary for $2,000.00 to cover preliminary expense on women's building, $1,000.00 for insurance and repairs and $255.00 balance of state appropriation for support of department of agriculture.

Secretary was instructed to insert advertisements in the daily papers for bids on the erection of the women and children's building to be opened June 17th; also advertisements for bids for the construction of 960 feet of 4 foot storm sewer and 16,000 square feet of 4 inch cement walk, to be opened May 30th.

The president appointed as committee on per diem and mileage Messrs. Wentworth, Pike and Mullen, who made the following report:

Mr. President: Your committee on per diem and mileage beg to report as follows:

Name.	Days.	Rate.	Amount.	Miles.	Amount.	Total.
C. E. Cameron	3	$4.00	$12.00	140	$14.00	$ 26.00
O. A. Olson	3	4.00	12.00	155	15.50	27.50
R. S. Johnston	3	4.00	12.00	158	15.80	27.80
E. M. Reeves	3	4.00	12.00	123	12.30	24.30
E. J. Curtin	3	4.00	12.00	195	19.50	31.50
E. M. Wentworth	3	4.00	12.00	60	6.00	18.00
C. F. Curtiss	2	4.00	8.00	37	3.70	11.70
F. E. Sheldon	3	4.00	12.00	123	12.30	24.30
J. P. Mullen	3	4.00	12.00	117	11.70	23.70
H. L. Pike	3	4.00	12.00	206	20.60	32.60
						$247.40

Respectfully submitted,
E. M. Wentworth,
H. L. Pike,
J. P. Mullen,
Committee.

(Warrants No. 10316-10325 inc.)

On motion of Mr. Johnston, seconded by Mr. Reeves, the report of the committee was adopted.

Mr. Mullen moved that the board adjourn to meet at the call of the president. Motion seconded by Mr. Pike and carried.

EXECUTIVE COMMITTEE MEETING.
JUNE 3, 1913.

Committee met with members Cameron and Corey present.

The committee visited the grounds to ascertain the cause and conditions by which Mr. L. D. Bruner, 2335 East Walnut St., Des Moines, met death. The accident which caused his death occurred about 9:30 a. m., June 3rd. Mr. Bruner had been assisting Henry Deets in moving several small buildings at the grounds this spring. At the time of the accident they were unloading the frame closet which had been moved from a point south of Machinery Hall to the camp grounds. The building was about 18x30 ft. without floor. The closet partitions remained in place while the building was moved. Blocking was placed under the rear end of the heavy timbers on which the building was carried and the trucks were removed. Jack screws were placed under the front end of the timbers and the trucks had just been removed. Mr. Deets was working at one of these jack screws from the outside of the building and Mr. Bruner was placing another jack screw under the timber on the opposite side of the building and thought it more convenient to set his jack farther under the building so it would not require so much digging to place the jack, and for that reason was working from the inside of the building. Mr. Deets stated that he cautioned Mr. Bruner to keep on the outside of the building and away from under the heavy timbers. It appears that he assumed a cramped position under the heavy timber and when the jack screws settled into the soft ground and the building caved over he was unable to free himself and get away, with the result that he was caught in such position that his neck was broken and death was instantaneous. Dr. Ryan was called at once but death had taken place before he arrived. The coroner was called and took charge of the body; he turned the remains over to the undertaking firm of Selover & Knight.

JUNE 4, 1913.

Committee met with members Cameron, Olson and Corey present.

The following application was filed with the Board of Railroad Commissioners for rates to the 1913 fair, and date for hearing was set for 9 o'clock a. m., June 28th:

June 3, 1913.

Board of Railroad Commissioners, Des Moines, Iowa.

Gentlemen—We wish to make application for passenger rates to the Iowa State Fair and Exposition, August 20th to 29th, inclusive, as provided by Section 2077 of the Supplement to the Code, 1907, as amended by Senate File 327, Acts of the Thirty-fifth General Assembly. We desire this rate over all lines operated in Iowa.

We are attaching herewith certificate showing the bona fide paid admissions at the Iowa State Fair, August 22nd to 30th, inclusive, 1912.

Trusting this matter will have your immediate attention, we remain,

Yours very truly,

STATE BOARD OF AGRICULTURE,

Per Secretary.

State of Iowa
County of Polk } ss.

I, A. R. Corey, Secretary of the Iowa State Fair and Exposition, being first duly sworn, on oath depose and say that the paid attendance at the Iowa State Fair and Exposition August 22-30, 1912, was one hundred and ninety-six thousand three hundred and ninety-two (196,392).

A. R. COREY,

Secretary Iowa State Fair and Exposition.

Subscribed and sworn to before me this 3rd day of June, 1913.

H. L. BOSQUET,

Notary Public in and for Polk County, Iowa.

EXECUTIVE COMMITTEE MEETING.
JUNE 10-11, 1913.

Committee met with members Cameron, Olson and Corey present.

Committee visited the fair grounds to determine the grade for sidewalk from street car entrance to Rock Island Avenue, and to look after other improvements under way.

Committee decided to move the old street car entrance to a location on Grand Avenue immediately east of the Shaver Carriage Company building and to remodel same for a dining hall by building on a kitchen, store room and serving room and putting in cement floor, etc.

The proposition of H. M. Kinsell to move Rest Cottage to the new location, move the toilet near the horse barns to camp grounds, and the old street car station to the new location, for $400.00 was accepted.

The following bids were on file at 11 o'clock a. m., June 11th, for excavating and grading site for the Women and Children's building. The proposition called for .... cents per cubic yard and for earth placed within a radius of 500 ft. and .... cents per cubic yard for earth moved over 500 ft. and not to exceed 2,000 ft., figured by the section of earth removed.

	500 ft.	Over 500 ft.
Horrabin & Jones, Des Moines, Iowa..........	25c	40c
J. M. Stewart & Co., Des Moines, Iowa........	39c	39c

Horrabin & Jones having the lowest bid were awarded the contract and the secretary was instructed to draw up contract and bond in accordance with plans and specifications.

The secretary was instructed to have plans and specifications made for two batteries of closets in the horse barns and for three additional sections to the street car entrance, and if possible to have plans ready and have bids on file by June 27th.

The time having arrived for opening bids on sewer and sidewalks, the committee proceeded to open the bids, which were as follows:

	Walks per sq. ft.	Sewer per lineal ft.
Geo. W. Koss Construction Co., Des Moines, Iowa....	.09.8c	$3.57
Potts Bros., Des Moines, Iowa	.09c	3.25
Lewis J. Johnson, Des Moines, Iowa..................	.10¼c	.....
James Horrabin & Co., Des Moines, Iowa............	.....	(a) 5.92
J. W. Turner Improvement Co., Des Moines, Iowa....	.....	(b) 4.50
Akin & Flutter, Des Moines, Iowa....................	.09c	.....

(a) Figured six (6) inches of concrete in place of five (5) inches as specified.

(b) Figured sewer 3½ft.x3½ ft. with reinforcement, in place of 4 ft. round sewer as specified.

Potts Bros., Des Moines, Iowa, being the lowest bidders on the storm sewer, and their bid on the walk being the same as Akin & Flutter, they were awarded both contracts and the secretary was instructed to draw up contract in accordance with plans and specifications.

The secretary was directed to advertise for bids for excavating and grading the site for the Women and Children's Building, to be on file by 11 o'clock a. m., June 11, 1913.

The following special days were decided upon for the 1913 fair:

Wednesday, Aug. 20, Preparation Day.
Thursday, Aug. 21, Preparation Day.
Friday, Aug. 22, Children's Day.
Saturday, Aug. 23, Des Moines Day.
Sunday, Aug. 24, Music Day.
Monday, Aug. 25, Implement Dealers' Day.
Tuesday, Aug. 26, Soldiers' and Pioneers' Day.
Wednesday, Aug. 27, State Day.
Thursday, Aug. 28, Live Stock Parade Day.

EXECUTIVE COMMITTEE MEETING.

JUNE 17-18, 1913.

Committee met with Cameron, Olson and Corey present.

The purpose of the meeting was to receive and open bids on the Women and Children's Building. Bids were received on two propositions as follow:

PROPOSAL NO. 1.

We will complete the foundation, including the sub-floor of the first story, and clear away all rubbish and loose materials on or before the 20th of August next, and finish the entire building on or before the 1st day of January, 1914, for the sum of..................................dollars.

PROPOSAL NO. 2.

We will enclose the entire building, including the roof, windows, doors and stairs, by the 20th of August, clear away all rubbish and material, permit the use of the building during the fair and complete it on or before November 1, 1913, for the sum of..............................dollars.

The bids were as follow:

Contractor's name and address.	Proposition No. 1.	Proposition No. 2.
Arthur H. Neumann & Co., Des Moines, Iowa	$ 99,222.00	
J. E. Tusant & Sons Co., Des Moines, Iowa	109,000.00	
J. B. McGorrisk, Des Moines, Iowa	110,500.00	
Benson & Marxer, Des Moines, Iowa	98,975.00	100,000.00
J. E. Lovejoy, Des Moines, Iowa	96,700.00	
Chas. Weitz' Sons, Des Moines, Iowa	96,200.00	

The committee figured as follows:

Lowest bid, Chas. Weitz' Sons	96,200.00
Furnishings	5,000.00
Plumbing	5,000.00
Grading	1,500.00
Architect's fees	3,300.00
Total	$111,000.00

The bids being so far in excess of the appropriation of $75,000.00, the committee decided to reject all bids and instruct the architect to revise plans and specifications so that it will come within the appropriation and to submit proposition to bidders at a later date.

The committee decided that inasmuch as Jones & Horrabin had not complied with the proposition to do the grading for site, and had failed to sign contract, furnish bond and start work, that their proposition be rejected and the secretary was instructed to return their certified check.

The secretary was authorized to place an order for six Quick Feeder wagons manufactured by the Bushnell Tank Works, size of box 3x3x6, at $25.00 each, to be used in cleaning horse and cattle barns.

Secretary was also authorized to place an order for one Studebaker sprinkler for track.

The committee carefully went over the order for tickets and decided to reserve box seats in the amphitheater at 75c and balance of stand at 50c; also decided upon the number and kinds of helpers' and employes' and free tickets to be ordered printed.

Secretary was instructed to get quotations and order 15,000 gallons of No. 2 road oil.

EXECUTIVE COMMITTEE MEETING.

JULY 3, 4, 5, 1913.

The committee met with the following members present: Cameron, Olson and Corey; also member of the Board J. P. Mullen.

On the morning of the 3rd, at ten o'clock, the committee appeared before the Railroad Commission to be present at the hearing set by said Commission to hear evidence on the application of the Iowa Department of Agriculture for reduced rates on all railroads for the State Fair and Exposition, August 20-28, 1913. Evidence was submitted showing that the bona fide attendance at the Iowa State Fair and Exposition August 24-30, 1912, was 179,436. Evidence was also submitted to show that the 58th annual exhibition had been held. After this evidence had been submitted the railroad attorneys present were given the privilege of questioning the witnesses; they also filed a written statement relative to their attitude in the case. At the close of the hearing the Commission announced that their decision would be forthcoming at an early date.

The executive committee adopted the following resolution:

Whereas, Mr. Clifford Thorne, Railroad Commissioner for the State of Iowa, is thoroughly conversant with the law enacted by the 35th General Assembly giving the commission authority to order reduced rates on all railroads to fairs and expositions where the bona fide paid admission the previous year was in excess of 75,000, and

Whereas, He is in possession of a large amount of other information relative to passenger rates, and

Whereas, He is in a position to render the Iowa Department of Agriculture valuable service in event the case now pending before the commission is taken into the courts; be it

Resolved, That he be retained by the executive committee to represent the Iowa Department of Agriculture as legal counsel in any case that may come out of the application for reduced rates now on file with the Railroad Commission.

The following quotations were received on road oil to be used on the streets at the fair grounds:

Standard Oil Company, .0398c per gallon, f. o. b. cars fair grounds.
Manhatton Oil Company, .0380c per gallon, f. o. b. cars fair grounds.

On these quotations the secretary was authorized to place an order for 16,000 gallons No. 4 road oil with the Manhattan Oil Company.

Secretary was instructed to place an order for three tons of calcium chloride to be used on the homestretch of the race track to keep down the dust.

Secretary was instructed to place an order with the Des Moines Park Swing Company for 100 lawn seats similar to those purchased of the Central Iron Works in 1912 at $1.90 each.

Secretary was authorized to place an order with the Studebaker Company for one 600 gallon track sprinkler as per specifications on file at $392.50 f. o. b. cars South Bend, Indiana.

Secretary was authorized to place an order for 25 tons of spent tan bark to be used in the poultry building and floral hall.

Secretary was authorized to place an order with the Empire Cooping Company for additional poultry cooping at the poultry building as per their quotations on file.

The committee selected the Madrid Concert Band, to consist of twenty first class musicians, to play an engagement in the agricultural building, and secretary was instructed to draw up contract.

The committee approved the contract for a one page advertisement in the Implement Trade Journal, to be used in advertising Implement Dealers' Day at the Iowa State Fair in conjunction with Nebraska, Missouri, Kansas, Oklahoma and Minnesota State Fairs.

Secretary was authorized to negotiate with the West Disinfectant Company of Chicago with a view of furnishing space on which to locate a tent and advertise their equipment and disinfectants in exchange for disinfecting all flush closets on the grounds during fair week.

The committee authorized the employment of George Brown as assistant superintendent of the Privilege Department from June 28th to the opening of the fair, pay not to exceed $4.00 per day.

The committee instructed the superintendent of grounds to widen to seven feet the door between the kitchen and pantry in the private dining room in the administration building. Also to cover the four brick chimneys extending through the offices and the sleeping rooms in the administration building with metal lath and plaster same, so as to form a vacuum and prevent excessive heat in the rooms.

The committee received the following bids for the completion of the street car station:

The Shorthill Company, Des Moines, Iowa	$ 2,600.00
Des Moines Bridge & Iron Works, Des Moines, Iowa	2,290.00
Chas. Weitz' Sons, Des Moines, Iowa	1,798.00
Des Moines Structural Steel Works, Des Moines, Iowa	1,625.00

The Des Moines Structural Steel Works having the lowest bid, contract was awarded said firm and the secretary and architect O. O. Smith were instructed to draw up contract, the structure to be completed on or before August 5, 1913.

The committee received a proposition from Cressy & Wingate to decorate the following buildings in accordance with specifications on file for the sum of $600.00; stock pavilion, agricultural building, machinery hall, rest cottage, exposition building, poultry building, dining room in administration building, carriage and pony section of the horse barns, automobile show room, and floricultural building. The proposition was accepted and secretary was authorized to sign contract.

The committee fixed the salary of Miss Minnie Truax, stenographer and general clerk in the Department of Agriculture, at $75.00 per month commencing July 1st.

Secretary was authorized to communicate with Secretary Simpson of the Minnesota State Fair and agree on an amount to be offered Mr. George A. Heyl of Washington, Ill., for his six-in-hand pony team as an attraction at the Iowa and Minnesota State Fairs.

The committee was informed that the bidders on the closets to be installed at the fair grounds would be unable to have their bids on file until Tuesday, July 8th. The committee therefore directed the secretary and architect O. O. Smith to open said bids and let contract to the lowest bidder, if in their opinion the low bid was reasonable.

IN VACATION.

In accordance with instructions of the executive committee, the secretary and architect O. O. Smith proceeded to open bids for the installation of closets. The following bids were received:

Des Moines Plumbing & Heating Co., Des Moines	$ 3,000.00
Wallace & Linnane, Des Moines, Iowa	2,888.00
Pray & Comerford, Des Moines, Iowa	2,857.00
VanDyke Heating & Plumbing Co., Des Moines, Iowa	2,000.00
Capital City Plumbing Company, Des Moines, Iowa	1,800.00

The Capital City Plumbing Company having submitted the lowest bid in accordance with the specifications, was awarded the contract.

EXECUTIVE COMMITTEE MEETING.

July 21, 22, 23, 24, 1913.

Committee met with all members present. Committee spent July 22nd on the state fair ground going over improvements and repairs to be made by the superintendent of grounds prior to the opening of the fair. Superintendent was instructed to make the following improvements:

Repair stalls along the west end of the brick horse barn by making all partitions two feet longer.

Put road to grade leading up to game preserve.

Put on a cheap rubberoid roofing on all sheep barns.

Fix up the outside horse show ring by skinning off the sod and making fill over sand at the south end of the ring.

Put a ten or twelve-foot fence around the corner by Weaver's drug store. Also close up all holes in the fence near the street car station and go over and repair all outside fence.

Paint front end of cattle barn No. 4.

Repair and paint ticket booths on inside of street car station and move three ticket booths south of street car station about five feet farther west.

Put pass gate at north end of street car station entrance; also put in a table about thirty inches wide and twelve feet long on which to sign statistical checks.

Replace all broken lights in the poultry building.

Put in turn stile at west end of bleachers to admit horsemen and others to paddock.

Put in two new turnstiles in place of two broken ones at Rock Island avenue entrance.

Order awning for south and west side of street car entrance.

Change all drinking fountains to a sanitary type.

Remove show cases from booth in exposition building occupied by the library commission to balcony of agricultural building.

Make arrangement for street car registers at all team gates.

Put up a street light outside of Grand avenue entrance.

Put in slat floor in shower bath room under seats in swine pavilion.

Paint all skylights in agricultural building.

Place strip around balcony in agricultural building to keep dust from falling down on exhibits on lower floor.

Order fifty galvanized iron garbage cans.

Build addition to barn for police and marshals' horses that will stall fourteen to sixteen head.

Put in one additional wash stand in the court of swine barn.

Put up band stand east of stock pavilion for Sunday concerts and for Fisher's band during the week.

Put in sidewalk from southwest corner of machinery hall to Machinery avenue. Also a north and south walk through the block east of the street car entrance.

Screen in the north and west porches of the Rest Cottage for a day nursery.

Put up two additional flag poles on the horse barn.

Order 175 boxes from O'Dea Hardware Company in accordance with their bid of 50c each in which to exhibit small grain.

WEDNESDAY, JULY 23.

The committee in company with Railroad Commissioner Thorne and other representatives of the railroad commission and commerce counsel, and Attorney General Cosson, attended the hearing before the U. S. District Court at Council Bluffs relative to granting the railroads a temporary injunction restraining the railroad commission from putting in reduced rates to the Iowa State Fair.

EXECUTIVE COMMITTEE MEETING.

JULY 28, 29, 30, 1913.

Committee met with all members present. The purpose of the meeting was to open bids for general contract and plumbing for the women and children's building to be erected on the Iowa State Fair grounds.

Bids were received on the following proposal and opened at two o'clock July 29th.

PROPOSAL.

I will furnish all materials and do all the labor as required by the plans and specifications, (as revised July 1, 1913), for the new Women and Children's Building to be located at the Iowa State Fair Grounds, for the sum of $............

If the tile of the Niagara pattern are used on the main roof, deduct $...............

If 5 to 2-in. cedar shingles, stained with a coat of oil stain, are used on the main roof in place of tile, deduct $..............

If the manual training and the exhibition rooms of the basement are not excavated, all outside openings and stair leading to these rooms are omitted, with the wall and pier footings resting only two feet below the present grade and the area walls about the N. W. windows are omitted, deduct $...............

If the porches are made 4 ft. 0 in. narrower, the cross beams made 2 in. narrower and each dimension of cross section, the roof made of 5 to 2-in. cedar shingles stained with oil stain, the columns built up rectangular 8-in.x18in. and the railings made of two 1½-in. gas pipe, deduct $........

The time for completing the work to be July 1, 1914.

The following bids were received on general contract and for installation of plumbing:

Contractor	Bldg. Complete	Deduct for Niagara tile	Deduct cedar shingles	Deduct excavating omitted	Deduct 16 ft. porches
J. E. Lovejoy, Des Moines, Iowa	$65,550.00	$310.00	$2,500.00	$1,500.00	$2,000.00
Weitz' Sons, Des Moines	67,832.00	200.00	1,717.00	1,636.00	1,353.00
Benson & Marxer, Des Moines	73,850.00	375.00	2,200.00	....	1,260.00
Eilenburger & Co. Chicago, Ill.	79,650.00	300.00	2,000.00	....	....
J. E. Tusant & Son, Des Moines	79,000.00	328.00	1,156.00	1,500.00	2,000.00
J. C. Mardis & Co. Des Moines	66,950.00	350.00	1,650.00	1,055.00	1,200.00
James Main & Son, Des Moines	76,950.00	328.00	1,900.00	800.00	1,104.00

PLUMBING.

McCawley Plumbing Company, Des Moines	$4,950.00
Bailey-Pepperd Co., Des Moines	4,065.00
Capital City Plumbing Company, Des Moines	4,045.00
Wallace-Linnane, Des Moines	3,987.00
Pray & Comerford, Des Moines	4,000.00
Van Dyck Plumbing and Heating Company, Des Moines	3,480.00

Mr. Lovejoy being the low bidder on the general contract was awarded the contract for $65,190.00, the committee taking advantage of the deduction of $310.00 for Niagara tile in place of English pattern.

The Van Dyck Plumbing & Heating Company being the low bidder on the installation of plumbing, was awarded the contract for $3,480.00.

Both Mr. Lovejoy and Mr. Van Dyck signed contract and furnished surety bond to the amount of 40 per cent of the contract to insure the faithful performance of their contract.

JULY 30th.

The secretary was authorized to make contract with Siester Bros. for taking care of the manure during fair week for $275.00. See contract on file.

The committee authorized the Iowa Pioneers' Association to expend not to exceed $135.00 in promoting and advertising Pioneer Day at the Iowa State Fair.

Secretary was authorized to order tents and supplies for the boys' camp; also to order necessary assembly tent and tents to be used for the babies' health contest.

The following bills on account of the funeral expenses of Mr. L. D. Bruner who was killed while laboring on the fair grounds were presented. Secretary was authorized to issue warrants in payment of same.

Webster & Smith, Osceola, Iowa	$ 7.00
Arden Jones, Osceola, Iowa	22.50
Selover & Knight, Des Moines, Iowa	99.00

The Des Moines Carpenters' Union was granted the use of the grand stand and race track on Labor Day, September 1st, without charge, providing they charged no admission at the grand stand or gates.

EXECUTIVE COMMITTEE MEETING.
AUGUST 8, 9, 10, 11, 1913.

Committee met with all members present, also Mr. E. J. Curtin.

On motion the Des Moines Motor Cycle Assn. was granted the use of the track for motor cycle races on Labor Day, September 1st, at the usual rental of $100.00 per day.

The committee accepted the proposition of Fred Hethershaw to put in the grain decorations and transform the band stand in the agricultural building into a corn and alfalfa palace for the sum of $400.00.

The 2:10 trot and the team race for free-for-all pacers having failed to fill, the committee and Mr. Curtin, superintendent of the speed department, deemed it advisable to reopen these two events, to close August 22d.

The committee instructed Mr. Curtin to go to the race meeting at Peoria, Ill., on Tuesday and Wednesday of the following week to solicit entries for the 2:10 trot and the team race for free-for-all pacers.

On August 8 and 9 Mr. H. L. Pike, superintendent of the cattle department, assigned the stalls in that department.

On August 9, 10 and 11, Mr. J. P. Mullen, superintendent of the machinery department, was at the grounds laying out the ground, assigning space and making contracts for that department.

Numerous other matters pertaining to the coming fair received the attention of the committee.

IN VACATION.

AUGUST 14, 1913.

C. F. Curtiss, superintendent of the horse department, checked stall assignments which had been made by Mr. Chas. Rhinehart and the secretary on the 9th inst., and also prepared program for the horse show in the stock pavilion each evening during the fair.

EXECUTIVE COMMITTEE MEETING.

AUGUST 16-29, INCLUSIVE, 1913.

The committee aproved the action of Secretary Corey whereby he advanced $1,000.00 to Herbert A. Kline for payment on freight on Midway shows from Edmonton, Canada, to Des Moines.

The committee had no regular meetings during the period of the fair but disposed of such matters as were brought to their attention.

MEETING OF STATE BOARD OF AGRICULTURE.

AUGUST 29, 1913.

The board met at nine o'clock a. m. in the board room of the administration building with the following members present: Cameron, Olson, Corey, Johnston, Phillips, Reeves, Curtin, Wentworth, Legoe, Curtiss, Sheldon, Summers, Mullen, Pike and Gilbertson.

On motion the reading of the minutes of the executive committee and the last board meeting was postponed until the annual meeting in December.

On motion of Mr. Wentworth, the secretary was instructed to acknowledge receipt of letter from Mr. Wadsworth and petitioners in the sheep and poultry departments.

Mr. Legoe moved that the superintendents of the poultry and sheep departments be allowed $100.00 each for their services. Mr. Wentworth moved to amend by making the rate $4.00 per day for twenty-five days. Motion as amended seconded and carried.

Secretary was authorized to issue warrant in payment of bill of N. H. Gentry for judging in swine department, this in addition to the swine department pay roll.

Mr. Olson moved that Treasurer Gilbertson and Secretary Corey be allowed $25.00 each for expenses during the fair. Motion carried, and warrants ordered drawn.

10596	A. R. Corey, extra services and expense	$ 25.00
10597	G. S. Gilbertson, extra services and expense	25.00

The following pay rolls were presented by the superintendents of the various departments, and on motion of Mr. Reeves, seconded by Mr. Gilbertson, the pay rolls as presented were approved and warrants ordered drawn for the amounts and deposited with Iowa Trust and Savings Bank to credit of superintendent's pay roll accounts:

10624	A. R. Corey, secy. pay roll, Publicity Dept	$ 98.15
10625	A. R. Corey, secy. pay roll, Forage Dept	526.50
10626	A. R. Corey, secy. pay roll, secy's office	556.75
10627	E. M. Wentworth, supt. pay roll, Trans. & Public Safety Dept.	4,238.45
10628	E. L. Beck, supt. pay roll, Poultry Dept	298.00
10529	M. G. Thornburg, supt. pay roll, Sheep Dept	180.00
10530	J. F. Summers, supt. pay roll, ticket takers, concession shows	644.50
10531	J. F. Summers, supt. pay roll, Concession Dept	312.00
10532	O. A. Olson, supt. pay roll, Admissions Dept.	2,612.50
10533	C. E. Camerson, pres. pay roll, janitors, Administration Bldg.	468.50
10634	E. M. Reeves, supt. pay roll, Horticultural Dept	196.77
10635	G. S. Gilbertson, treas. pay roll, Treas. Dept	1,434.20
10636	J. P. Mullen, supt. pay roll, Machinery Dept	533.50
10637	F. E. Sheldon, supt. pay roll, Agricultural Dept	404.50
10638	T. C. Legoe, supt. pay roll, Fine Arts Dept.	472.00
10639	C. F. Curtiss, supt. pay roll, Horse Dept	1,386.50
10640	R. S. Johnston, supt. pay roll, Swine Dept	359.00
10641	E. J. Curtin, supt. pay roll, Speed Dept	728.35
10642	C. W. Phillips, supt. pay roll, Ticket Auditing Dept	368.13
10643	H. L. Pike, supt. pay roll, Cattle Dept	1,095.14
10644	Wesley Greene, supt. pay roll, Horticultural Dept	91.50

The president appointed as committee on per diem and mileage, Messrs. Johnston, Pike and Legoe.

Mr. Curtin moved that the Secretary have necessary warrant drawn in payment of pay roll for school exhibits department.

The committee on per diem and mileage made the following report, which was adopted and the secretary instructed to issue warrants for the respective amounts:

Mr. President: Your committee on per diem and mileage beg to report as follows:

Name.	Days.	Rate.	Amount.	Miles.	Amount.	Total.
C. E. Cameron	21	$4.00	$ 84.00	140	$14.00	$ 98.00
O. A. Olson	21	4.00	84.00	155	15.50	99.50
R. S. Johnston	21	4.00	84.00	158	15.80	99.80
C. W. Phillips	21	4.00	84.00	210	21.00	105.00
E. M. Reeves	21	4.00	84.00	123	12.30	96.30
E. J. Curtin	23	4.00	92.00	195	19.50	111.50
E. M. Wentworth	25	4.00	100.00	60	6.00	106.00
T. C. Legoe	21	4.00	84.00	85	8.50	92.50
C. F. Curtiss	21	4.00	84.00	37	3.70	87.70
F. E. Sheldon	21	4.00	84.00	123	12.30	96.30
J. F. Summers	31	4.00	124.00	160	16.00	140.00
J. P. Mullen	21	4.00	84.00	117	11.70	95.70
H. L. Pike	21	4.00	84.00	206	20.60	104.60
						$ 1332.90

Respectfully submitted,
R. S. Johnston,
H. L. Pike,
T. C. Legoe,
Committee.

Warrants Nos. 10583 to 10595 were drawn to cover per diem and mileage for members of the board in accordance with the report of the per diem and mileage committee.

On motion of Mr. Olson, the board adjourned.

EXECUTIVE COMMITTEE MEETING.

AUGUST 29, 1913.

The executive committee directed the superintendent of grounds to complete the drain on the north side of Grand avenue to the brick dining halls. Also, to have Potts Bros. put in storm sewer between Grand avenue bridge and the machinery building; and the superintendent was directed to fill in the lagoon with rubbish and dirt from the women and children's building excavation.

The superintendent was also directed to clean the grounds thoroughly immediately after the fair, remove the cinders from the street in front of the administration building, and fill the same with dirt from the women and children's building excavation.

The superintendent was also directed to complete the excavation for the women and children's building by day labor, on account of the dirt being used to fill in in and around the building which made it difficult to let a contract for that class of excavating.

EXECUTIVE COMMITTEE MEETING.
SEPTEMBER 25-26, 1913.

Committee met with all members present. The purpose of the meeting was to go over all bills which had been paid by the secretary since the close of the fair and approve the payment of all unpaid bills on file.

The following settlement was made with Potts Bros. for cement work done in accordance with contract on file.

Final settlement of all cement work done under contract with Potts Bros., Des Moines, Iowa, at the following prices:

Four foot storm sewer	$3.25 per lineal ft.		
Four inch sidewalks	.09c per sq. ft.		
Three inch floor in buildings	.06c per sq. ft.		
To 4 ft. cement sewer from Grand avenue bridge to brige near race track, 266¼ ft. at $3.25			$ 865.31
To 4 ft. cement sewer from Machinery Bldg. to south fence, 979.8 ft. at $3.25			3,184.35
To 4 ft. cement sewer from Grand avenue bridge to Machinery Bldg., 55¾ ft. at $3.50			195.12
On 4 ft. sewer from Grand avenue to Machinery Bldg, 25c per ft. additional was allowed on account of two approaches.			
Total 4 ft. storm sewer, 1,301.80 ft.			$ 4,244.78
To 4 in. sidewalk in front of street car station	607.2 sq. ft.		
South side of street from street car station to Rock Island avenue	9134.4 sq. ft.		
North side of street in front of horse barn	5500.8 sq. ft.		
Approaches to horse barns	1444.2 sq. ft.		
Patches in walk, north side of Grand avenue	108. sq. ft.		
Walk in front of new dining hall	454.4 sq. ft.		
Total 4 in. walks at .09c	17249.0 sq. ft.		$1,552.41
To 3 in. floor in new dining hall, 5392.5 sq. ft. at .06c	$	319.77	
To 3 in. floor in two toilet rooms in horse barn, 877.10 sq. ft. at 06c		52.63	
To 3 in. floor—patch in agricultural building, 208 sq. ft. at .06c		12.48	
One wash stand at swine pavilion, 144 sq. ft. at .10c per ft.		14.40	
Total			$ 399.28
Total			$ 6,196.47

The committee approved the pay roll of the school exhibits department and allowed E. C. Bishop fifteen days at $4.00 per day for his services as superintendent of that department.

The committee also allowed W. B. Barney fifteen days at $4.00 per day as superintendent of the dairy department.

The committee authorized the secretary to make contract with the Iowa Poultry and Pet Stock Association for use of the poultry cooping November 22-28, inclusive, for staging poultry show in the Auditorium in the city of Des Moines.

Also similar contract with the Iowa Poultry Association for staging the Iowa State Poultry Show in the Coliseum in Des Moines January 1-7, inclusive. The rental in each case to be $150.00.

The committee agreed upon a rental charge of $15.00 for the use of the swine pavilion on Friday, September 26, 1913, for a swine sale conducted by J. A. Cope of Carlisle, Iowa.

Committee witnessed the moving pictures taken at the Iowa State Fair by the Superior Film Company and accepted 1,200 feet of film at 35c per foot as per contract, and 330 additional feet at 25c per foot.

The committee, accompanied by O. O. Smith, architect, visited the fair grounds to determine what progress was being made with the women and children's building; also to determine location of the street leading up to this building.

The committee took up the matter of renewing insurance expiring September 6th and 30th, 1913, and new insurance on buildings that had not heretofore been insured.

The committee agreed upon the following general form insurance and instructed the secretary to have same renewed and $10,200.00 additional written:

1.	$10,000	On Exposition Building.
2.	1,000	On dry closet located east of brick dining halls.
3.	2,000	On Power Hall, Machinery Exhibits Building.
4.	5,000	On Poultry Building.
5.	4,000	On Iowa State College Building.
6.	1,000	On Sanitary dry closet east of Exposition Building.
7.	4,200	On six (6) frame horse barns, Nos. 1 to 6 inc. ($700 each).
8.	500	On double sheep barn—east of frame cattle barns.
9.	6,300	On fourteen (14) frame cattle barns ($450 each), known as cattle barns 4 to 17 inclusive.
10.	2,000	On frame barn known as cattle barn No. 3.
11.	4,900	On seven (7) speed barns, known as speed barns Nos. 1 to 7 inclusive. ($700 on each.)

12.	2,500	On five (5) speed barns, known as speed barns Nos. 8 to 12 inclusive. ($500 on each.)
13.	1,500	On Floral Hall Building, south of Women and Children's Building.
14.	400	On Police Headquarters.
15.	500	On Forage Barn, north Swine Pavilion.
16.	400	On Emergency Hospital, east Agricultural Building.
*17.	1,000	On frame building formerly Rest Cottage, east of Women and Children's Building.
*18.	2,000	On enclosed bleachers east of Grand Stand.
*19.	2,000	On enclosed bleachers west of Grand Stand.
*20.	3,000	On Dining Hall west of Grand Stand on Grand avenue.
*21.	1,000	On dry closet in camp grounds, s. e. Poultry Building.
22.	2,000	On Amphitheater chairs stored in cattle barns Nos. 1 and 2 and in brick horse barn, the insurance on this item to apply on chairs in each building in such proportion as the value stored in each building bears to the aggregate value of the property insured.

*Buildings added to general form insurance.

The committee instructed the secretary to renew the $15,000 tornado insurance on swine pavilion and barn expiring September 26, 1913.

Renew $1,500 fire and tornado insurance on farm house, $500 fire and tornado on farm barn.

Renew $5,000 tornado and have $5,000 additional tornado written on brick horse barn; allow $5,000 fire on brick barn to elapse. The total insurance on brick horse barn to be $14,500 fire and $24,500 tornado.

Renew $3,000 fire and tornado on brick cattle barn No. 2 expiring September 26th.

Reduce the insurance from $4,000 fire and tornado on power house to $1,000 fire and tornado on building and $1,000 fire on contents, and designate the building as transformer station.

Write $2,000 tornado on new street car station.

Cancel $1,500 fire and tornado insurance on closet in camp grounds expiring August 1, 1914, and $1,500 fire and tornado on old street car entrance, both of which were added to general form insurance.

The secretary was also instructed to place $10,000 tornado insurance on grand stand providing companies will write insurance for this amount at the usual rate.

AUDITING COMMITTEE MEETING.

OCTOBER 2, 3, 4, 1913.

Bills were audited and aproved by C. W. Phillips September 17, 18, 19, and by R. S. Johnston on October 2, 3 and 4.

EXECUTIVE COMMITTEE MEETING.

OCTOBER 22, 23, 24, 25, 1913.

Executive committee met with all members present, for the purpose of appraising the value of all the frame buildings on the Iowa State Fair grounds, and to transact such other business as might be brought before the attention of the committee.

The committee, assisted by Oliver O. Smith, architect, and James H. Deemer, superintendent of the fair grounds, on October 22, 23 and 24, made a careful examination of all the frame buildings upon the fair grounds and appraised their present value, as shown by the inventory book on file in this department.

EXECUTIVE COMMITTEE MEETING.

NOVEMBER 11, 12, 13, 1913.

Committee met, with all members present, for the purpose of assisting the committee from the Des Moines Realty Exchange, consisting of W. H. Harwood, B. S. Walker and L. A. Jester, selected to appraise the value of the real estate owned by the State of Iowa and devoted to the use of the Iowa State Fair and Exposition grounds.

The value of the real estate as fixed by this committee is set forth in the following report:

To the Board of Directors of the Iowa Department of Agriculture:

Gentlemen: The undersigned as requested have made a careful examination and appraisal of the lands owned by the State of Iowa and under the control of the Iowa Department of Agriculture, known as the Iowa State Fair Grounds and situated in the city of Des Moines, and herewith submit our estimate of the value of said lands as follows:

In our judgment the lands owned by the State of Iowa and controlled by the Iowa State Board of Agriculture, embracing 283 34-100 acres, is of the total value of $375,070.00.

In arriving at the value of these lands, we have taken into consideration the special advantages of the location and topography, which, in our judgment, are ideal for the purposes to which they are devoted, being adjacent to the city of Des Moines and easily accessible therefrom by the various lines of transportation leading thereto, and having trackage facilities from all the railway lines centering in the city of Des Moines.

We found the west 120 acres approximately having a general level surface, especially favorable to its use for exhibition buildings and race track.

Adjoining this tract of ground to the east is approximately 30 acres of the more elevated ground, making it especially adapted to the use of the Fine Arts Building, Horticultural Building, and other buildings of similar character, being perfectly drained and nicely shaded. Adjoining this tract on the north are approximately 12 acres of ground which are adapted to exposition buildings. To the east of these two tracts we found approximately 35 acres well wooded and gently undulating adapted not only to buildings but also highly suitable for camping purposes.

To the east of this tract the next 61 acres are especially adapted for ornamentation as a park and for camping purposes. The remainder of this tract, containing about 60 acres, is nicely wooded and the topography admits of the laying out of rides and drives, and for use as a park or for camping purposes.

Your appraisers also took into consideration the fact that it has been quite definitely determined that probably the entire tract is underlaid with coal, which materially adds to its value.

Your committee has estimated the value of the different portions or subdivisions of the property in accordance with the plat furnished us, and which conforms to the description heretofore given as follows:

The west 85 acres and the south 30 acres of the 42 acres, adjoining the 85 acres on the east at $2,000.00 per acre	$230,000.00
The north 12 acres of the 42 acres at $500.00 per acre	18,000.00
The 35 acres adjoining the 42 acres on the east at $1,200.00 per acre	42,000.00
The next 61 acres at $900.00 per acre	54,900.00
The next 60 34-100 acres at $500.00 per acre	30,170.00
	$375,070.00

Des Moines, Iowa, November 11, 1913.

Respectfully submitted,
W. H. HARWOOD,
B. S. WALKER,
L. A. JESTER,
Committee.

Members of the Iowa State Fair Boys Camp in 1913.

PART II.

Proceedings of the State Agricultural Convention

WEDNESDAY, DECEMBER 10, 1913.

The convention was called to order at ten o'clock a. m. in the agricultural rooms at the state house, by the President of the State Board of Agriculture, C. E. Cameron. Vice-President O. A. Olson presided while Mr. Cameron delivered the following address:

PRESIDENT'S ADDRESS.

C. A. CAMERON.

Again we meet in annual convention to go over the work of the last year and to prepare for the year to come. We in Iowa should congratulate ourselves for the many blessings we have received in the last year as compared with those of some of our sister states. While the total yield of our crops has not come up to that of former years—or the general average of the state—in dollars we are away above the average in the total value of farm products, showing that no state can accommodate itself to weather conditions and still raise a crop like the grand old State of Iowa. And the people have come to realize this, for there never was a time in the history of the state when so many people are anxious to own some of this never failing soil.

They talk about the increase in the price of land in other states, but in my opinion there is no state in the Union whose land values have advanced so rapidly as right here in Iowa. I know of land in my own community that ten or twelve years ago could have been bought for $50.00 per acre and today is selling at $200.00 per acre, or an average yearly advance of almost $15.00 per acre, and still advancing. I recently paid a visit to my old home in northeastern Ohio and in talking with a number of farmers and business men the general expression was "We take off our hats to Iowa; it is a great state." I admit, gentlemen, that I stepped a little higher when I heard all these nice things about the state we so much admire.

Not only have we been blessed with our crops in the past year, but the State Fair, in which we are all so much interested, was the most successful in its history, with the largest attendance and the balance on the right side of the ledger. In Chicago last week was held the largest and most interesting meeting of the association known as the

American Association of Fairs and Expositions. Fifty-five members of this association were present, from every part of the United States and from four associations from our neighbor on the north, Canada, and they all reported great interest along fair lines. People have come to realize that these institutes have become the great educational institutions of our states by giving practical demonstrations to those who are unable to attend our agricultural colleges and showing what can be accomplished by scientific methods upon our farms. The increased interest in state fairs the past year is shown by the attendance reported by the fifty-five members present. The total attendance for the year was something over thirty millions of people—over one third of our population—and this does not include county and district fairs.

I will not take up any of your time by giving you the details of the last Iowa State Fair, as Mr. Corey, the Secretary, has a very complete report for you, but there are a few things that I want to call attention to, and one that you should be especially interested in, for I think the future success of our fairs depends upon good roads. Take for example the State Fair this year; in one day we had something like three thousand automobiles on our grounds, or rather, that passed through our gates, for a great many on the grounds were owned by campers and were not counted. But we will take the count as they came through the gates—three thousand—and make an average of four persons to each auto. That would make twelve thousand people, or almost one-fifth of the largest attendance we had on our grounds in any one day. And I am sure the proportion at the county and district fairs would be much larger than this; I would put it at not less than fifty per cent, and I believe this will increase from year to year. Now the question is, "What would we be up against if we had bad roads?" I can only judge the results by a comparison of the town I live in. As in every other town, when the roads are good everyone comes to town Saturday afternoon and evening in their autos; and I think I am safe in saying that seventy-five per cent of our farmers have automobiles. Last Saturday the roads were not in very good condition for autos but the farmers would not take the trouble to hitch up their teams, and there was not one-third of the people in town. I am giving this as an illustration as to what would happen to our fairs if the roads were in this condition. It seems to me that everyone interested in the future success of our fairs must be a good roads booster. Iowa has more county fairs than any state in the Union and she should have the best roads of any state in the Union, for she can afford to build them.

I have been much interested in the report of agricultural conditions in Great Britain and Ireland as made by Hon. James Wilson and Uncle Henry Wallace and printed in Greater Iowa, a publication issued by the Iowa Department of Agriculture. I am sure a great many of the things they do in those countries would be a benefit to our land if we followed their example in the future. Because of the increasing value of our land we must encourage more intensive farming. I have also been interested in the report of Hon. D. P. Hogan, whom Governor Clarke appointed as a member of the committee to study the foreign system of rural credits. This report is also published in Greater Iowa and is worthy of your consideration. Governor Clarke also appointed a committee composed of John Cownie, Eugene Secor and F. D. Steen to report on the needs of agriculture in the State of Iowa. I don't know where you would find three more representative men or men who know more about the needs of the farmers of Iowa. You will also find their report in the last issue of Greater Iowa.

Hog cholera this year was the most fatal in the history of the state. Science has not fully demonstrated the ability to handle this dreaded disease, but I am satisfied a good start has been made and in due time it will be handled with very little loss. Notwithstanding the great loss Iowa has suffered from this disease, she will still be the leading swine producing state of the Union. I sometimes think if it were not for the hog cholera we would have an over-production. While it falls heavy upon those who lose their hogs, those who do not are the gainers; just like our other farm crops—a smaller output but increased prices.

The legislature at the commencement of the session last winter seemed to have gained a wrong impression in regard to the working and manner of conducting the State Fair, presumably from misinformed persons who had not taken the time or pains to look into its affairs, and a resolution that the State Fair be investigated was offered and passed. The management of the fair certainly had no objections, and really courted the investigation. The only thing the management objected to and thought unfair was the accusations made at the time the resolution was presented. But after a thorough investigation by the efficiency engineers hired by the state to go over the books (and I am sure they made a rigid examination for they spent almost two months on it) they made a report to the Committee on Retrenchment and Reform, who in turn made their report to the legislature, and in this report they found everything in good shape, the receipts and expenditures fully accounted for, and the committee was pleased to report that in their opinion Iowa had the best managed fair and the greatest fair in the United States. I am sure the members of the legislature coincided with this report for they made an appropriation of seventy-five thousand dollars for a women and children's building to be erected on the fair grounds; and I am sure when you see this building in full working order next year you will be proud of it. The Iowa State Fair, as I have said before, is looked upon as a model state fair.

The President appointed the following committees:

COMMITTEE ON CREDENTIALS.

J. P. Mullen, Pocahontas county; W. W. Morrow, Union county; James Nowak, Poweshiek county.

COMMITTEE ON RESOLUTIONS.

John W. Palm, Henry county; L. H. Pickard, Shelby county; J. Q. Lauer, Bremer county.

Secretary of the State Board of Agriculture, A. R. Corey, made the following report to the convention:

SECRETARY'S REPORT.

A. R. COREY.

In preparing a report to this convention I have endeavored to outline briefly the work accomplished by the three divisions of the Department of Agriculture during the past year; viz., The Publicity Department, Stallion Registration Division and the Iowa State Fair and Exposition.

I shall not attempt to go into details concerning each division for the detailed reports will be set forth in pamphlets now being prepared by the department; in the report of the Stallion Registration Division, and the Iowa Year Book of Agriculture, copy for which will be prepared immediately after the first of the year.

STALLION REGISTRATION DIVISION.

During the period from January 1st to December 1st, 1913, the department issued 5,941 certificates for pure bred stallions and 2,550 certificates of soundness for grade stallions; 102 certificates for pure bred jacks and 598 certificates of soundness for grade jacks. These figures show that 70% of the stallions offered for public service in the state of Iowa are of pure breeding. This is a larger percentage of pure bred stallions in service than any other state in the Union. Illinois comes nearest to these figures with 59% pure bred as shown by the 1912 report of the Illinois Stallion Registration Board.

The stallion law as amended by the thirty-fifth General Assembly is a marked improvement over the law enacted at the previous session of the legislature.

Stating it briefly the amendments provided that all stallions must pass a veterinary examination for soundness before state certificate may be issued. Under the old law owners had the privilege of making an affidavit as to the soundness of their stallions, which was one of the weak points. The unsoundness known as ringbone was transferred to the class which disqualifies a stallion for public service and bog spavin was transferred from the disqualifying class to the class of unsoundness that must be mentioned in the state certificate and in all advertising.

Provision was made for issuing state certificate for blind stallions where an examination by three veterinarians proved the blindness to be caused by accident or disease not transmissible. Under the old law a number of valuable stallions were disqualified on account of blindness caused by accident or from disease known not to be transmissible.

The amended law provides for a permanent state certificate of soundness for stallions six years old or over, providing they have successfully passed veterinary examination for soundness for two consecutive years.

There is also a provision that all stallions imported from other states must be accompanied by a certificate of soundness showing the stallions to be free from all diseases and unsoundness mentioned in Section Three of the law.

We found less difficulty in enforcing the law during the past year than in previous years. The owners of the better class of stallions seem to have come to the conclusion that the law is a benefit to them and it is gradually eliminating the grade stallions and unworthy sires. There is one thing every breeder should bear in mind when purchasing a stallion for public service, and that is to demand a state certificate properly transferred.

We have found there are still in existence a number of stallions registered in the so called "fake associations" and have in the past year been transferred with the understanding that they were of pure breeding. A number of these cases have been adjusted by the department by requiring the original owner to take back the stallion and refund the purchase price; other cases have been adjusted in the courts, with the assistance of the department, by securing damages for the innocent purchaser. The certificates issued by the American Percheron Registry Association of LaGrange, Illinois, seem to be most common and cause the greatest amount of trouble. According to the articles of incorporation of this association "The object for which it is formed is to keep stud book for recording the breeding of stallions and mares having three or more top crosses of pure bred sires; to issue certificates of pedigree; to publish year book of such animals recorded, and to encourage the breeding of Percheron horses." Therefore, stallions registered in this association do not necessarily have to be of pure breeding in order to secure a certificate of pedigree, but these certificates are not recognized by stallion registration boards and consequently these stallions must be enrolled and stand as grades.

PUBLICITY DEPARTMENT.

The Publicity Department was organized the first of February, 1913, with Howard N. Whitney in charge, and is for the purpose of keeping before the people of Iowa the many natural advantages they enjoy; to disseminate information pertaining particularly to opportunities offered on Iowa farms; to publish pamphlets concerning agricultural problems, crop and farm statistics, etc.

The official organ of this department is the publication known as "Greater Iowa," issued monthly and entered at the post office at Des Moines as second class matter. The subscription is free to all students and boosters.

Beginning with the issue of the first of March the Publicity Department has published ten issues of "Greater Iowa" with an average circulation of 8,500 copies per issue. The paper goes to each newspaper in the state, commercial clubs, real estate dealers, bankers, officers of institutes, short course associations, district and county fairs, managers of state fairs, exhibitors and others within the state of Iowa. Outside of Iowa it goes to the United States Government Immigration officers, real estate dealers in Illinois handling Iowa land, and a few copies to newspaper and magazine writers and students of agriculture in this country and foreign lands.

To a list of 343 newpapers and farm papers special publicity news letters have been forwarded from time to time. This is the same class of reading matter that Canada is sending out and for which she is paying advertising rates. Our Iowa newspapers and farm papers, however, realizing the value of advertising Iowa's opportunities and advantages have quite generally published not only articles from "Greater Iowa" but also the special news letters and they have in this manner received wide circulation.

Five thousand copies of the Wilson-Wallace report on "Agricultural Conditions in Great Britain and Ireland" have been published in pamphlet form and are being distributed by this department.

The report of the Iowa Commission selected by Governor Clarke to report on "The Needs of Agriculture of the State of Iowa" was furnished to a number of Iowa newspapers including the leading dailies of the state by means of galley proofs of the article as it appeared in the December first issue of Greater Iowa.

FARMERS' INSTITUTES.

From the reports of the farmers' institutes held during the period from July 1, 1912, to June 30, 1913, we find eighty-six counties held 112 institutes.

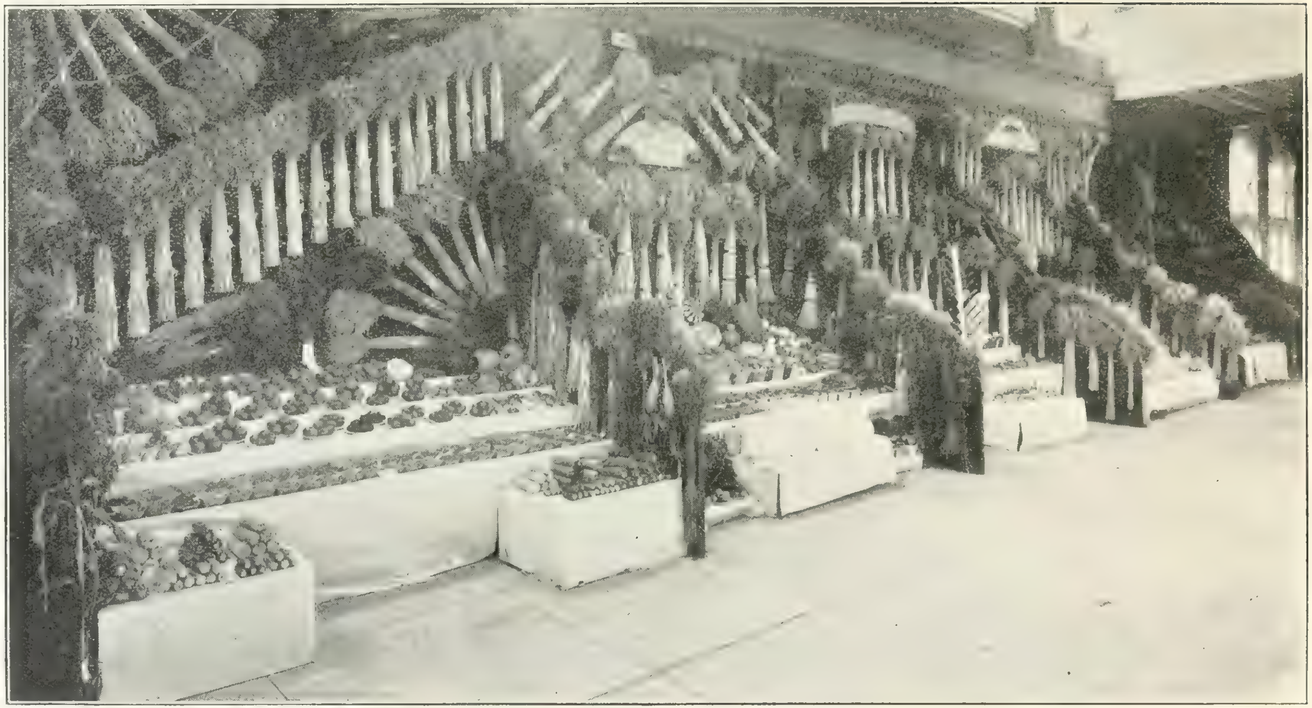
The total attendance of all institutes was 182,018, or an average attendance of 1,625 each. They held 892 sessions with an average attendance of 204 each session.

The state aid paid towards the support of these institutes amounted to $6,384.21. In addition to this there was contributed by subscription, miscellaneous receipts, etc., $23,440.98 for the general support of these institutes.

The expense in conducting these institutes is divided as follows:

For premiums on live stock, agricultural products, domestic science, etc., $13,241.48; speakers, judges and instructors, $5,468.00; printing, advertising, hall rent and miscellaneous expense, $11,078.97.

The following table sets forth the receipts and disbursements, attendance, number of sessions, etc., for each institute held in the state.



Some of the Individual Farm Exhibits at the 1913 Iowa State Fair.

FINANCIAL STATEMENT OF COUNTY
FOR FISCAL YEAR JULY 1,

Number	Counties	Number Sessions	Total Attendance	Cash on Hand	Re-
					Miscellaneous Receipts
1	Adair	7	1,700	------------	$ 34.50
2	Allamakee	30	3,600	$ 750.37	797.10
3	Appanoose	33	20,500	476.11	860.87
4	Benton	22	2,575	161.45	635.85
5	Boone	10	2,000	217.10	631.86
6	Black Hawk	11	1,500	34.20	------------
7	Bremer	9	550	------------	103.89
8	Buchanan	6	2,200	45.84	31.90
9	Buena Vista	12	3,400	312.75	678.95
10	Butler	8	1,060	32.01	38.00
11	Calhoun	6	500	108.88	48.00
12	Carroll	26	4,425	36.65	872.15
13	Cass	5	500	------------	13.50
14	Cedar	5	1,000	48.34	41.65
15	Cerro Gordo	7	640	------------	7.00
16	Cherokee	13	2,750	103.29	787.91
17	Clarke	9	2,100	------------	55.35
18	Clay	6	1,700	261.11	94.12
19	Clayton	7	1,000	------------	81.25
20	Clinton	9	1,150	69.85	663.56
21	Dallas	9	2,650	25.45	199.87
22	Davis	12	4,100	4.68	356.15
23	Decatur	8	395	------------	293.25
24	Delaware	8	1,600	------------	27.12
25	Des Moines	6	2,400	35.74	267.55
26	Dickinson	6	400	204.84	466.10
27	Dubuque	8	2,200	15.34	111.00
28	Emmet	6	1,150	128.27	10.90
29	Fayette	5	600	------------	37.50
30	Floyd	12	700	35.11	46.85
31	Fremont	8	2,300	55.76	224.90
32	Grundy	7	2,750	------------	99.75
33	Guthrie	5	500	77.26	95.00
34	Hamilton	7	700	8.00	69.00
35	Hancock	5	2,125	9.66	------------
36	Hardin	11	800	150.47	242.60
37	Harrison	6	1,200	------------	73.00
38	Henry	5	1,000	27.61	491.15
39	Howard	3	1,400	------------	------------
40	Humboldt	23	10,000	150.20	853.70
41	Ida	4	700	------------	------------
42	Iowa	31	1,466	220.00	525.85
43	Jackson	5	2,000	3.75	75.00
44	Jasper	9	800	3.42	81.15
45	Jefferson	8	1,500	147.83	47.80
46	Johnson	8	4,000	87.46	244.25
47	Keokuk	9	1,500	------------	194.72
48	Kossuth	10	2,400	11.98	108.00

FARMERS INSTITUTES IN IOWA
1912 TO JUNE 30, 1913.

ceipts	Total Receipts	For Speakers and Judges	Disbursements		Total Disbursements	Cash on Hand	Overdrafts	Number
State Aid			Premiums	Miscellaneous Expenses				
$ 75.00	$ 109.50	$ 29.81	$ 48.00	$ 52.25	$ 130.06	-----	$ 20.56	1
75.00	1,022.47	210.94	196.05	937.80	1,344.79	$ 277.68	-----	2
75.00	1,411.98	84.09	557.16	395.99	1,037.24	374.74	-----	3
75.00	872.30	87.57	232.00	313.75	633.32	238.98	-----	4
75.00	923.96	39.90	441.35	239.27	720.52	203.44	-----	5
74.97	109.17	35.00	-----	39.97	74.97	34.20	-----	6
75.00	178.89	76.64	34.00	68.25	178.89	-----	-----	7
75.00	152.74	22.57	15.00	37.45	75.02	77.72	-----	8
75.00	966.70	174.80	243.00	388.81	806.61	160.09	-----	9
75.00	145.01	57.73	11.50	52.00	121.23	23.78	-----	10
75.00	231.88	36.57	62.50	59.09	158.16	73.72	-----	11
75.00	983.80	263.52	191.00	346.57	801.09	182.71	-----	12
36.35	49.85	11.85	-----	24.50	36.35	13.50	-----	13
75.00	164.99	19.59	73.00	36.65	128.24	36.75	-----	14
75.00	82.00	39.50	7.00	35.50	82.00	-----	-----	15
75.00	966.20	209.02	270.20	316.00	795.22	170.98	-----	16
75.00	130.35	45.65	75.00	20.29	140.94	-----	10.59	17
75.00	430.23	69.82	65.10	183.17	318.09	112.14	-----	18
75.00	156.25	50.31	69.50	31.05	150.86	5.39	-----	19
75.00	811.41	54.09	635.00	146.90	735.99	75.42	-----	20
75.00	300.32	47.21	186.50	52.03	285.74	14.58	-----	21
75.00	435.83	50.12	269.71	92.39	412.22	23.61	-----	22
75.00	368.25	31.65	193.20	43.60	268.45	99.80	-----	23
75.00	102.12	19.72	56.42	25.98	102.12	-----	-----	24
75.00	378.29	43.86	188.50	129.17	361.53	16.76	-----	25
75.00	745.94	33.63	99.80	306.33	439.76	306.18	-----	26
75.00	201.34	48.74	48.50	57.85	155.09	46.25	-----	27
75.00	214.17	18.37	15.74	68.03	102.14	112.03	-----	28
75.00	112.50	60.52	-----	36.50	97.02	15.48	-----	29
75.00	156.96	41.62	13.00	57.45	112.07	44.89	-----	30
75.00	355.66	48.27	181.45	17.06	246.78	108.88	-----	31
75.00	174.75	73.95	40.00	61.00	174.95	-----	.20	32
75.00	247.26	34.03	77.75	67.86	179.64	67.62	-----	33
75.00	152.00	45.89	63.00	17.11	126.00	26.00	-----	34
75.00	84.66	41.99	16.80	22.80	81.59	3.07	-----	35
75.00	468.07	49.59	169.25	83.08	301.92	166.15	-----	36
75.00	148.00	60.25	62.50	29.50	152.25	-----	4.25	37
75.00	503.16	52.56	286.00	93.08	431.64	71.52	-----	38
75.00	75.00	51.20	-----	23.80	75.00	-----	-----	39
75.00	1,078.90	170.48	80.25	598.43	849.16	229.74	-----	40
74.75	74.75	13.75	-----	61.00	74.75	-----	-----	41
75.00	820.85	238.23	176.50	325.37	740.10	80.85	-----	42
74.85	153.60	17.35	75.00	57.50	149.85	3.75	-----	43
75.00	159.57	42.96	-----	38.27	81.23	78.34	-----	44
75.00	270.63	22.66	-----	58.35	81.01	189.62	-----	45
75.00	406.71	52.91	238.50	95.22	386.63	20.08	-----	46
75.00	269.72	41.56	-----	148.93	190.49	79.23	-----	47
75.00	194.98	66.98	-----	81.30	148.28	46.70	-----	48

FINANCIAL STATEMENT OF COUNTY

Number	Counties	Number Sessions	Total Attendance	Cash on Hand	Re-
					Miscellaneous Receipts
49	Lee	14	2,284	92.39	467.10
50	Linn	12	1,500	30.76	74.09
51	Louisa	10	950	----------	111.45
52	Lucas	25	2,600	6.68	389.90
53	Lyon	16	2,260	1.00	377.05
54	Madison	6	3,000	72.00	34.81
55	Mahaska	11	2,700	420.73	1,295.80
56	Marion	12	4,000	----------	183.50
57	Marshall	4	300	26.05	158.32
58	Mills	5	500	----------	----------
59	Mitchell	6	300	----------	5.00
60	Monona	6	500	----------	130.19
61	Montgomery	8	1,150	----------	200.30
62	Muscatine	5	1,200	----------	----------
63	O'Brien	9	2,100	142.60	112.43
64	Page	19	3,500	----------	1,400.00
65	Palo Alto	12	3,050	40.33	127.16
66	Plymouth	4	400	160.57	173.00
67	Pocahontas	19	5,100	109.55	253.95
68	Polk	28	4,000	438.02	2,422.75
69	Poweshiek	6	1,500	605.43	29.00
70	Ringgold	6	2,000	26.51	314.15
71	Sac	7	2,063	75.00	707.60
72	Scott	16	4,000	88.71	499.45
73	Shelby	6	560	15.45	97.85
74	Sioux	8	1,950	----------	236.60
75	Story	10	1,300	54.27	281.00
76	Tama	4	800	27.95	25.00
77	Taylor	6	1,400	----------	----------
78	Union	8	1,350	32.00	128.55
79	Van Buren	16	3,000	----------	----------
80	Wapello	19	2,175	52.34	491.80
81	Warren	12	1,550	359.44	415.04
82	Wayne	8	1,000	103.03	177.25
83	Webster	6	900	60.88	202.50
84	Winneshiek	8	850	----------	2.81
85	Woodbury	6	1,100	60.19	291.70
86	Worth	8	800	----------	18.31
	Total	892	182,018	$ 6,662.06	$ 23,440.58

FARMERS INSTITUTE IN IOWA.—Continued.

ceipts		Disbursements						
State Aid	Total Receipts	For Speakers and Judges	Premiums	Miscellaneous Expenses	Total Disbursements	Cash on Hand	Overdraft	Number
75.00	634.49	123.85	231.00	81.16	436.01	198.48	----------	49
75.00	179.85	45.78	------------	95.53	141.31	38.54	----------	50
75.00	186.45	46.50	------------	141.40	187.90	----------	1.45	51
75.00	471.58	105.33	112.65	140.24	358.22	113.36	----------	52
75.00	453.05	140.50	----------	311.91	452.41	.64	----------	53
75.00	181.81	11.88	55.50	61.00	128.38	53.43	----------	54
75.00	1,791.53	15.04	608.75	758.73	1,382.52	409.01	----------	55
75.00	258.50	10.50	315.00	82.00	407.50	----------	149.00	56
75.00	259.37	80.00	61.40	65.00	206.40	52.97	----------	57
48.30	48.30	----------	------------	48.30	48.30	----------	----------	58
75.00	80.00	44.12	------------	40.00	84.12	----------	4.12	59
75.00	205.19	27.84	148.15	10.00	185.99	19.20	----------	60
75.00	275.30	23.34	193.30	67.38	284.02	----------	8.72	61
74.99	74.99	18.17	------------	56.82	74.99	----------	----------	62
75.00	330.03	193.57	33.00	39.60	266.17	63.86	----------	63
75.00	1,475.00	183.96	1,233.29	57.75	1,475.00	----------	----------	64
75.00	242.49	48.00	106.00	63.85	217.85	24.64	----------	65
75.00	408.57	24.36	108.50	117.60	250.46	158.11	----------	66
75.00	438.50	135.12	102.75	170.02	407.89	30.61	----------	67
75.00	2,935.77	223.06	1,758.61	321.18	2,302.85	632.92	----------	68
75.00	209.43	25.23	124.77	64.88	214.88	----------	5.45	69
75.00	415.66	33.10	131.70	129.18	293.98	121.68	----------	70
75.00	857.60	51.85	570.00	156.75	778.60	79.00	----------	71
75.00	663.16	59.63	236.50	210.64	506.77	156.39	----------	72
75.00	188.30	39.65	105.50	91.37	236.52	----------	48.22	73
75.00	311.60	53.75	43.50	209.91	307.16	4.44	----------	74
75.00	410.27	34.05	183.43	70.50	287.98	122.29	----------	75
75.00	197.95	27.94	74.75	53.75	156.44	41.51	----------	76
75.00	75.00	77.00	------------	13.70	90.70	----------	15.70	77
75.00	235.55	23.00	75.05	78.75	176.80	58.75	----------	78
75.00	75.00	22.00	37.00	18.00	77.00	----------	2.00	79
75.00	622.14	81.27	296.00	204.52	581.79	40.35	----------	80
75.00	849.48	30.21	203.00	252.79	486.00	363.48	----------	81
75.00	355.28	46.48	176.00	61.03	283.51	71.77	----------	82
75.00	338.38	35.10	73.00	76.10	184.20	154.18	----------	83
75.00	77.81	49.73	------------	28.08	77.81	----------	----------	84
75.00	426.89	70.26	194.65	114.80	379.71	47.18	----------	85
75.00	93.31	64.81	------------	28.50	93.31	----------	----------	86
$ 6,384.21	$36,487.25	$ 5,468.00	$13,241.48	$11,078.97	$29,788.45	$6,969.16	$ 270.26	

SHORT COURSE ASSOCIATIONS.

There were a number of short courses held throughout the state through the co-operation of local associations and the Extension Department at Ames. However, the department is not in a position to present the complete data for these associations for the reason that only the short courses receiving state aid make a report to the department.

The $200.00 state aid for county and district fairs is available for short courses in counties where no county or district fair is held and the $75.00 for institutes is available for short courses in counties where no institutes are held.

The department received reports from eight short courses that were entitled to the state aid; four drawing the amount appropriated for county fairs and four the amount for institutes.

These short courses held a total of 172 sessions, or an average of 21 each. The total attendance was 27,842, or an average of 3,480 each. The amount raised to finance these courses was $10,890.59, of which amount the state contributed $1,175.

The disbursements were as follows: Premiums paid, $2,973.20; expense of speakers, judges and instructors, $1,515.81; printing, advertising and miscellaneous expense, $5,710.34.

The following table sets forth the above information for each county:

Interior View of the Baby Health Contest Tent at the 1913 Iowa State Fair

FINANCIAL STATEMENT OF SHORT
FOR THE YEAR ENDING

Number	COUNTIES	Number of sessions	Total attendance	Cash on hand	Re
					Miscellaneous Receipts
1	Black Hawk	10	1,150		$ 1,069.09
2	Chickasaw	21	1,965		676.65
3	Crawford	12	1,000		876.98
4	Dallas	43	6,427		916.47
5	Plymouth	19	1,500		2,690.60
6	Washington	19	3,300	$ 12.79	1,026.10
7	Winnebago	36	8,500	605.65	1,716.55
8	Wright	12	4,000		124.71
	Total	172	27,842	$ 618.44	$ 9,097.15

COURSE ASSOCIATIONS OF IOWA

JUNE 30, 1913.

ceipts	Total Receipts	For speakers and judges	Disbursements		Total Disbursements	Cash on hand	Overdraft	Number
State Aid			Premiums	Miscellaneous Expenses				
$ 200.00	$ 1,269.09	$ 265.68	$ 354.30	$ 556.23	$ 1,176.21	$ 92.88	----------	1
75.00	751.65	144.70	10.00	536.45	691.15	60.50	----------	2
75.00	951.98	25.00	----------	926.98	951.98	----------	----------	3
200.00	1,116.47	146.37	603.50	266.60	1,016.47	100.00	----------	4
200.00	2,890.60	350.75	1,240.00	1,551.03	3,141.78	----------	$ 251.18	5
275.00	1,313.89	50.00	516.19	682.02	1,248.21	65.68	----------	6
75.00	2,397.20	498.31	193.00	1,157.53	1,848.84	548.36	----------	7
75.00	199.71	35.00	56.21	33.50	124.71	75.00	----------	8
$ 1,175.00	$10,890.59	$ 1,515.81	$ 2,973.20	$ 5,710.34	$10,199.35	$ 942.42	$ 251.18	

COUNTY AND DISTRICT FAIRS.

There was a total of ninety-one county and district fairs held in the state during the year 1913, or four less than was held last year. These fairs received $20,170.63 state aid.

There is presented herewith three tables covering the receipts and disbursements, number of exhibitors and amount paid in premiums in the live stock and other departments, and the admission fees charged at the various fairs in the state.

Table No. I sets forth the amount of state aid received and the total receipts. The disbursements for speed events, premiums in all other departments and total disbursements. The balance on hand and over-drafts November 1, 1913.

Table No. II gives the total number of exhibitors in all departments. The number of horses, cattle, swine, sheep and poultry on exhibit and the amount of premiums paid in each division. The amount paid in premiums for agricultural products, pantry and kitchen products, fine arts and miscellaneous departments.

Table No. III gives the total attendance, total paid admissions and the admission fees charged at the outside gates, grandstand and quarter stretch.

The following nine fairs paid premiums, other than for speed contests, in excess of $1,500.00 each and were paid the maximum amount of state aid, $300.00, appropriated for a county or district fair:

Interstate Live Stock Fair	Sioux City	$ 8,019.70
The Dairy Cattle Congress	Waterloo	5,708.00
Marshall County Fair Association	Marshalltown	2,878.05
North Iowa Fair	Mason City	2,875.69
Bremer County Fair Association	Waverly	2,270.95
Union District Agricultural Society	West Liberty	2,147.50
Henry County Agricultural Society	Mt. Pleasant	1,751.00
Clinton County Agricultural Society	DeWitt	1,524.80
Warren County Agricultural Society	Indianola	1,524.75

GRAND CHAMPIONS
OF THE EXPOSITION
BRED FED & EXHIBITED BY ESCHER & RYAN Irwin Ia

The Grand Champion Car Load of Steers at the 1913 International Live Stock Show, Chicago, Ill., owned by Escher & Ryan, Irwin, Ia.

TABLE NO. 1—1913 FINANCIAL STATEMENT OF COUNTY AND

Number	County or District	City or Town	Balance on hand	Receipts		
				Miscellaneous receipts	State aid	Total
1	Adams	Corning	$ 116.22	$ 1,948.30	$ 204.82	$ 2,269.34
2	Allamakee	Waukon		3,965.28	211.67	4,176.95
3	Audubon	Audubon	708.80	3,983.95	227.47	4,920.22
4	Benton	Vinton	187.17	5,559.92	218.87	5,965.96
5	Black Hawk	Waterloo	189.04	14,151.78	300.00	14,640.82
6	Boone	Ogden		2,000.80	200.40	2,201.20
7	Boone	Boone	26.57	3,499.58	207.54	3,733.69
8	Bremer	Waverly	41.77	16,583.18	300.00	16,924.95
9	Buchanan	Independence	185.82	5,754.61	240.67	6,181.10
10	Buena Vista	Alta	38.14	6,579.92	248.29	6,866.35
11	Butler	Allison	11.07	2,842.72	211.02	3,064.81
12	Calhoun	Rockwell City		6,319.56	217.31	6,536.87
13	Calhoun	Manson		4,200.62	244.25	4,444.87
14	Carroll	Carroll		4,997.89	142.00	5,139.89
15	Cass	Atlantic		7,377.58	294.70	7,672.28
16	Cass	Massena	828.80	1,493.20	149.80	2,471.80
17	Cedar	Tipton	645.79	4,562.63	287.47	5,495.89
18	Cerro Gordo	Mason City		11,700.39	300.00	12,000.39
19	Chickasaw	New Hampton	536.47	3,623.13	111.10	4,270.70
20	Chickasaw	Nashua	20.31	4,201.83	252.30	4,474.44
21	Clayton	National		1,442.20	223.25	1,665.45
22	Clayton	Strawberry Point	258.30	5,184.14	209.47	5,651.91
23	Clayton	Elkader		4,422.71	206.19	4,628.90
24	Clinton	De Witt	1,144.41	8,281.06	300.00	9,725.47
25	Crawford	Arion	309.34	2,342.05	207.14	2,858.53
26	Davis	Bloomfield	176.87	4,083.80	251.90	4,512.57
27	Delaware	Manchester	35.00	2,050.00	190.50	2,275.50
28	Dickinson	Spirit Lake	15.09	2,445.74	173.26	2,634.09
29	Fayette	West Union	445.24	8,488.15	225.35	9,158.74
30	Franklin	Hampton	56.50	4,054.40	234.29	4,345.19
31	Greene	Jefferson	400.70	5,591.12	262.83	6,254.65
32	Grundy	Grundy Center	582.69	3,511.08	205.65	4,299.42
33	Guthrie	Guthrie Center		3,524.15	221.15	3,745.30
34	Hancock	Britt	5.00	5,451.00	196.02	5,652.11
35	Hardin	Eldora		6,874.03	282.46	7,156.49
36	Harrison	Missouri Valley	3.39	2,131.86	228.02	2,363.27
37	Henry	Mt. Pleasant	703.57	9,568.80	300.00	10,572.37
38	Henry	Winfield	4.45	4,536.55	224.22	4,765.22
39	Humboldt	Humboldt		4,000.00	223.76	4,223.76
40	Iowa	Marengo		4,122.19	120.26	4,242.45
41	Iowa	Victor	394.36	2,266.03	152.52	2,812.91
42	Iowa	Williamsburg	240.64	1,320.86	204.01	1,765.51
43	Jackson	Maquoketa	297.35	5,087.75	249.52	5,634.62
44	Jasper	Newton	83.27	4,021.96	261.89	4,367.12
45	Jefferson	Fairfield	101.39	3,795.58	155.16	4,052.13
46	Johnson	Iowa City	245.50	4,795.31	222.15	5,262.96
47	Jones	Monticello	765.89	5,007.05	138.56	5,911.50
48	Jones	Anamosa	25.80	6,801.77	219.85	7,047.42
49	Keokuk	What Cheer		4,057.94	231.25	4,289.19
50	Kossuth	Algona	341.36	6,974.87	270.00	7,586.23
51	Lee	Donnelison	16.03	2,395.51	164.44	2,575.98
52	Lee	West Point	26.55	3,071.13	227.31	3,324.99
53	Linn	Central City	218.50	3,525.23	248.62	3,992.35
54	Linn	Marion	30.81	2,968.24	257.68	3,256.73
55	Louisa	Columbus Junction	301.90	6,769.95	283.77	7,355.62
56	Lyon	Rock Rapids	1,695.81	11,968.33	256.72	13,920.86
57	Mahaska	New Sharon	87.90	2,764.84	215.04	3,067.78
58	Marion	Pella		2,133.20	216.92	2,350.12
59	Marshall	Rhodes		1,042.30	194.40	1,236.70
60	Marshall	Marshalltown	466.34	13,923.70	300.00	14,690.04
61	Mills	Malvern		8,504.45	226.02	8,730.47
62	Mitchell	Osage		2,396.40	229.67	2,626.07

DISTRICT FAIRS IN IOWA RECEIVING STATE AID 1913.

Disbursements				Profit and Loss		Assets and Liabilities		
Miscellaneous expense and improvements	Speed premiums	Other premiums	Total	Balance Nov. 1, 1913	Overdraft Nov. 1, 1913	Value of property	Indebtedness	Number
$ 1,421.07	$ 300.00	$ 548.22	$ 2,269.29	$ .05		$ 10,000.00		1
3,436.41	827.40	616.75	4,880.56		$ 703.61	8,000.00	$ 698.53	2
2,293.32	1,572.20	774.70	4,640.22	280.00		8,000.00		3
3,745.12	1,475.35	688.75	5,909.22	56.74		8,000.00	2,500.00	4
7,769.78		5,708.00	13,477.78	1,163.04		25,000.00	14,700.00	5
728.40	1,245.00	504.00	2,477.40		276.20	9,250.00	4,500.00	6
1,789.91	1,187.00	575.40	3,552.31	181.38		9,000.00	2,200.00	7
10,399.98	1,591.54	2,270.95	14,262.47	2,662.48		18,000.00		8
6,251.97	365.19	906.69	7,523.85		1,342.75	10,000.00	2,783.42	9
3,263.16	2,303.75	982.90	6,549.81	316.54		10,000.00	2,500.00	10
1,908.65	834.89	610.25	3,353.79		288.98	3,500.00	750.00	11
3,532.15	2,245.00	673.15	6,450.30	86.57		12,000.00	1,500.00	12
2,014.22	801.00	942.50	3,757.72	687.15		7,875.00	1,700.00	13
5,118.40	1,316.95	355.00	6,790.35		1,650.46	10,600.00	3,391.00	14
3,738.17	2,023.45	1,447.00	7,208.62	463.66		25,000.00	5,000.00	15
1,226.03	219.00	374.50	1,819.53	652.27		2,000.00		16
3,487.75	330.00	1,374.70	5,192.45	303.44		11,000.00		17
5,147.93	2,850.50	2,875.69	10,874.12	1,126.27		25,000.00	7,000.00	18
3,684.57		277.75	3,962.32	308.38		5,000.00		19
3,144.27	246.00	1,023.00	4,413.27	61.17		7,500.00	3,000.00	20
1,826.25	150.00	732.50	2,708.75		1,043.30	5,000.00	1,425.00	21
4,118.87	695.45	594.75	5,409.07	242.84		7,000.00	1,700.00	22
2,868.42	853.00	561.95	4,283.37	345.53		6,500.00	4,980.00	23
6,054.56	2,100.00	1,524.80	9,679.36	46.11		9,000.00		24
1,615.25	525.00	571.43	2,711.68	146.85		2,068.15		25
1,903.63	1,450.00	1,019.00	4,372.63	139.94		16,000.00	1,525.00	26
742.00	342.00	476.25	1,560.25	715.25		7,500.00	4,000.00	27
793.24	1,350.00	433.15	2,576.39	57.70		7,500.00	5,500.00	28
5,723.56	1,018.00	753.50	7,495.06	1,663.68		16,500.00		29
2,902.67	650.00	842.95	4,395.62		50.43	6,500.00	3,900.00	30
3,959.05	2,030.00	1,128.30	7,117.35		862.70	6,000.00	6,600.00	31
1,719.78	849.00	556.54	3,125.32	1,174.10		8,000.00		32
1,282.19	1,571.00	711.50	3,564.69	180.61		7,500.00	1,500.00	33
3,070.10	1,834.00	490.05	5,394.15	257.96		5,000.00	2,000.00	34
3,599.61	1,995.00	1,324.60	6,919.21	217.28		9,000.00	450.00	35
1,366.99	130.00	780.25	2,277.24	86.03		10,000.00	800.00	36
3,171.37	3,450.00	1,751.00	8,372.37	2,200.00		24,000.00		37
2,369.47	1,650.00	742.25	4,761.72	3.50		10,000.00	2,000.00	38
3,250.00	480.00	737.65	4,467.65		243.89	3,500.00	350.00	39
2,414.75	1,220.00	300.65	3,935.40	307.05		5,000.00	2,500.00	40
1,439.09	840.00	381.30	2,660.39	152.52		4,500.00	1,000.00	41
1,110.86		540.10	1,650.96	114.55		7,800.00	2,262.34	42
2,635.04	1,581.90	995.25	5,212.19	422.43		7,800.00	3,360.00	43
2,224.23	1,496.00	1,118.88	4,839.11		471.99	16,000.00	3,000.00	44
2,106.98	1,285.00	387.90	3,779.88	272.25		12,000.00	1,700.00	45
2,850.72	1,735.00	721.50	5,307.22		44.26	20,000.00	6,600.00	46
2,662.88	1,225.36	346.40	4,234.64	1,676.86		4,000.00		47
4,318.51	1,215.00	698.50	6,232.01	815.41		10,000.00	4,000.00	48
1,466.07	1,500.00	812.50	3,778.57	510.62		10,000.00		49
2,208.82	1,200.00	1,200.00	4,608.82	2,977.41		20,000.00	3,900.00	50
884.15	1,010.00	411.10	2,305.25	270.73		2,000.00	500.00	51
1,375.14	1,150.00	773.10	3,298.24	26.75		5,700.00	2,500.00	52
3,162.98		986.25	4,149.23		156.88	10,000.00	2,909.00	53
1,093.79	988.58	1,076.76	3,159.13	97.60		14,000.00	7,000.00	54
4,438.87	2,190.00	1,337.70	7,966.57		610.95	10,000.00	3,500.00	55
5,914.97	3,572.50	1,067.25	10,554.72	3,366.14		26,000.00		56
1,271.75	609.30	650.45	2,531.50	536.28		8,000.00		57
1,369.34	155.00	669.25	2,193.59	156.52		8,000.00	2,300.00	58
750.70		486.00	1,236.70			2,500.00	85.70	59
7,719.03	1,902.25	2,878.05	12,499.33	2,190.71		20,000.00		60
3,736.64	2,517.65	760.25	7,014.54	1,715.93		13,000.00	9,660.76	61
1,800.00	125.00	796.70	2,721.70		95.63	6,000.00	100.00	62

TABLE NO. I—

Number	County or District	City or Town	Balance on hand	Receipts		
				Miscellaneous receipts	State aid	Total
63	Monona	Onawa	61.60	2,607.00	217.00	2,885.60
64	Monroe	Albia	----	6,411.55	270.00	6,681.55
65	Muscatine	West Liberty	626.32	6,841.16	300.00	7,767.48
66	Muscatine	Wilton	943.12	3,373.55	212.67	4,529.34
67	O'Brien	Sutherland	30.52	3,140.16	220.83	3,391.51
68	O'Brien	Sheldon	45.27	7,811.30	236.29	8,092.86
69	Page	Clarinda	437.46	3,320.15	286.34	4,043.95
70	Page	Shenandoah	----	8,528.43	277.02	8,805.45
71	Pocahontas	Fonda	2,375.92	6,535.27	225.50	9,136.69
72	Pottawattamie	Avoca	----	7,202.61	229.01	7,431.62
73	Poweshiek	Malcom	12.85	2,705.80	200.75	2,919.40
74	Poweshiek	Grinnell	200.80	4,234.62	228.29	4,663.71
75	Sac	Sac City	204.00	6,560.78	237.22	7,002.00
76	Shelby	Harlan	726.82	5,914.65	249.30	6,890.77
77	Sioux	Orange City	43.97	2,045.50	182.60	2,272.07
78	Story	Ames	13.74	3,282.45	256.85	3,553.04
79	Tama	Toledo	----	3,977.08	235.57	4,212.65
80	Taylor	Bedford	23.00	4,034.00	94.28	4,151.28
81	Van Buren	Milton	----	2,208.98	204.10	2,413.08
82	Wapello	Eldon	19.86	3,149.30	176.00	3,345.16
83	Warren	Indianola	----	4,719.75	300.00	5,019.75
84	Wayne	Clio	----	251.55	34.54	286.09
85	Wayne	Sewal	70.04	868.54	76.10	1,014.68
86	Webster	Fort Dodge	----	3,839.80	205.77	4,045.57
87	Winnebago	Forest City	----	2,980.15	157.30	3,137.45
88	Winneshiek	Decorah	13.66	3,596.82	201.58	3,812.06
89	Woodbury	Sioux City	53.83	40,349.14	300.00	40,702.97
90	Worth	Northwood	311.00	1,760.65	204.43	2,276.08
91	Wright	Clarion	521.57	3,080.24	204.93	3,806.74
	91 Fairs, Total, 1913		$19,751.27	$ 468,375.37	$20,205.17	$ 508,331.81
	94 Fairs, for comparison, 1912		$29,453.66	$ 461,571.27	$20,860.32	$ 511,885.25

CONTINUED

Disbursements				Profit and Loss		Assets and Liabilities		
Miscellaneous expense and improvements	Speed premiums	Other premiums	Total	Balance Nov. 1, 1913	Overdraft Nov. 1, 1913	Value of property	Indebtedness	Number
1,998.03	167.50	670.00	2,835.53	50.07	----------	5,000.00	3,000.00	63
2,066.55	3,000.00	1,200.00	6,266.55	415.00	----------	*	600.00	64
3,012.93	1,970.00	2,147.50	7,130.43	637.05	----------	*	----------	65
2,245.67	1,500.00	626.70	4,372.37	156.97	----------	6,000.00	----------	66
1,899.17	643.75	708.30	3,251.22	140.29	----------	6,000.00	2,200.00	67
3,635.96	3,200.00	862.90	7,698.86	394.00	----------	10,000.00	----------	68
3,833.81	----------	1,363.45	5,197.26	----------	1,153.31	3,000.00	----------	69
4,574.12	2,731.97	1,270.25	8,576.34	229.11	----------	25,000.00	5,459.52	70
4,695.28	3,420.00	755.00	8,870.28	266.41	----------	10,000.00	----------	71
4,647.97	1,567.86	790.14	7,005.97	425.65	----------	6,000.00	2,900.00	72
1,228.15	1,160.00	507.50	2,895.65	23.75	----------	7,500.00	200.00	73
2,235.08	1,098.61	782.88	4,116.57	547.14	----------	10,000.00	4,950.00	74
2,315.30	3,455.00	872.20	6,642.50	359.50	----------	16,000.00	----------	75
2,997.49	2,675.00	993.00	6,665.49	225.28	----------	15,000.00	----------	76
1,011.54	458.30	456.50	1,926.34	345.73	----------	5,000.00	600.00	77
2,571.86	----------	1,068.50	3,640.36	----------	87.32	1,800.00	300.00	78
2,086.25	885.62	855.70	3,827.57	385.08	----------	15,000.00	8,970.00	79
1,603.14	2,505.00	235.70	4,343.84	----------	192.56	6,000.00	4,343.84	80
1,060.96	1,125.00	541.00	2,726.96	----------	313.88	5,000.00	2,900.00	81
1,700.65	1,139.90	440.00	3,280.55	64.61	----------	6,200.00	3,200.00	82
1,461.50	1,725.00	1,524.75	4,711.25	308.50	----------	*	----------	83
82.66	----------	86.35	169.01	117.08	----------	----------	----------	84
265.43	355.00	190.25	810.68	204.00	----------	*	----------	85
1,600.00	1,950.00	557.70	4,107.70	----------	62.13	20,000.00	15,000.00	86
3,093.75	----------	393.25	3,487.00	----------	349.55	10,000.00	2,500.00	87
3,160.26	136.00	515.80	3,812.06	----------	----------	5,000.00	----------	88
20,165.32	7,287.49	8,019.70	35,472.51	5,230.46	----------	200,000.00	----------	89
949.67	475.00	544.31	1,968.98	307.10	----------	4,000.00	----------	90
1,909.21	1,226.00	549.30	3,684.51	122.23	----------	5,000.00	2,000.00	91
$ 269,501.29	$ 118,233.21	$ 88,186.79	$ 475,921.29	$42,411.30	$10,000.78	$ 1,031,593.15	$ 204,954.11	
$ 302,753.87	$ 108,188.56	$ 86,697.06	$ 497.639.49	$24,777.33	$10,531.57	$ 950,115.88	$ 174,699.74	

*Grounds leased.

TABLE NO. 11—TOTAL NUMBER OF EXHIBITORS, NUMBER EXHIBITORS IN LIVE STOCK DEPARTMENTS, NUMBER HORSES, CATTLE, SWINE, SHEEP AND POULTRY ON EXHIBITION AND AMOUNT OF PREMIUMS PAID IN EACH DIVISION.

County	Number of exhibitors	Number of exhibitors live stock depts.	Horses		Cattle		Swine		Sheep		Poultry		Premiums paid Agricultural dept.	Premiums paid Pantry and Kitchen dept.	Premiums paid Fine Arts dept.	Premiums paid other depts.
			No. exhibited	Premiums paid	No. exhibited	Premiums paid	No. exhibited	Premiums paid	No. exhibited	Premiums paid	No. exhibited	Premiums paid				
Adams, Corning	117	23	32	$105.00	15	$95.50	25	$57.00	41	$55.00	300	$54.00	$78.00	$53.00	$50.72	
Allamakee, Waukon	156	63	40	222.50	25	93.50	27	25.50	18	22.50	47	23.50	131.25	25.00	68.50	$4.50
Audubon, Audubon	68	26	37	201.50	30	151.00	45	88.00			65	25.60	204.60	42.10	18.90	40.00
Benton, Vinton	138	78	104	333.00	22	56.00	31	54.00	23	26.00	97	28.25	21.25	31.75	138.50	
Black Hawk, Waterloo	141	40			700	5,208.00							250.00	50.00		200.00
Boone, Ogden	139	29	88	286.00	4	26.00			14	28.00	23	7.00	19.25	47.00	90.75	
Boone, Boone	141	40	44	205.00	19	88.50	6	6.00	20	27.00	400	118.75	60.50	19.15	50.50	
Bremer, Waverly	309	85	150	288.50	170	434.25	60	99.50	23	17.50	280	79.50	815.99	49.80	68.25	417.76
Buchanan, Independence	146	35	102	324.00	77	302.00	20	48.00	7	15.00	62	12.96	23.50	17.55	11.48	142.20
Buena Vista, Alta	147	26	29	85.00	35	166.50	41	90.50	14	19.50	56	38.50	42.25	72.00	49.50	419.15
Butler, Allison	150	20	45	149.50	6	22.00	66	106.50			250	71.30	93.45	114.00	37.00	16.50
Calhoun, Rockwell City	68	30	39	128.00	3	20.00	39	64.50	63	50.00	162	176.70	24.25	51.95	157.75	
Calhoun, Manson	224	38	87	159.00	23	119.00	52	126.75	6	6.50	129	49.75	96.75	72.50	53.50	258.75
Carroll, Carroll	56	6	18	136.50	21	104.00	6				26	14.00	13.50	85.50	1.50	
Cass, Atlantic	292	67	33	478.00	6	172.00	115	170.00	5	63.50	28	70.50	123.50	227.50	104.00	38.00
Cass, Massena	79	10	12	93.00	18	131.50	11	29.00	5	26.00	24	22.50	23.50	17.50	27.50	4.00
Cedar, Tipton	174	54	110	624.00	15	170.00	50	82.00	33	118.00	111	42.25	91.50	82.55	51.45	112.95
Cerro Gordo, Mason City	526	60	83	329.50	97	555.00	48	48.00	67	125.00	135	44.75	1,369.49	58.75	57.50	287.70
Chickasaw, New Hampton	68	10	2	9.00	22	54.50	23	40.50	15	22.00	47	5.50	9.00	23.75	15.25	98.25
Chickasaw, Nashua	208	78	118	237.50	96	235.00	30	85.00	20	16.50	284	120.25	106.75	35.00	125.00	62.00
Clayton, National	55	15	43	136.00	2	8.00	87	67.00	26	67.00	38	19.00	60.90	74.15	214.30	86.15
Clayton, Strawberry Point	230	21	27	87.75	3	12.00	39	80.50	20	37.00	76	35.00	50.25	82.50	144.25	65.50
Clayton, Elkader	720	78	28	121.50	5	24.00	52	122.00	2	12.00	46	27.50	41.00	120.00	68.20	25.75
Clinton, DeWitt	322	41	33	322.00	42	383.00	148	139.00	22	31.00	140	57.50	142.50	107.50	248.50	93.80
Crawford, Arion	91	35	58	161.80	32	59.00	75	90.00	9	36.00	15	8.50	79.25	21.95	27.53	87.40
Davis, Bloomfield	226	90	47	196.50	45	213.50	69	105.50	48	92.50	197	117.00	68.00	51.75	115.25	59.00
Delaware, Manchester	132	32	45	150.00	22	96.00	1	8.00	11	21.00	42	16.25	20.50	23.75	93.45	47.30
Dickinson, Spirit Lake	140	40	30	101.00	35	73.00	40	64.50	20	11.00	50	19.00	119.50	16.30	11.35	17.50

TABLE NO. II.—CONTINUED.

County	Number of exhibitors	Number of exhibitors live stock depts.	Horses		Cattle		Swine		Sheep		Poultry		Premiums paid Agricultural dept.	Premiums paid Pantry and Kitchen dept.	Premiums paid Fine Arts dept.	Premiums paid other depts.
			No. exhibited	Premiums paid	No. exhibited	Premiums paid	No. exhibited	Premiums paid	No. exhibited	Premiums paid	No. exhibited	Premiums paid				
Fayette, West Union	394	71	82	184.00	11	40.00	76	78.50	8	11.00	92	61.75	121.50	34.50	130.00	92.25
Franklin, Hampton	161	40	20	134.25	38	192.25	75	118.00	18	24.75	200	50.55	99.25	41.80	82.05	100.05
Greene, Jefferson	273	73	126	363.75	61	217.50	66	165.50	6	15.00	76	52.80	65.50	60.50	135.00	52.75
Grundy, Grundy Center	125	18	35	80.75	58	146.77	------	----------	11	23.75	137	38.48	27.90	49.95	111.60	77.34
Guthrie, Guthrie Center	300	40	88	196.00	23	107.00	41	129.00	------	----------	99	29.25	42.75	87.00	70.50	50.00
Hancock, Britt	98	20	21	59.00	24	150.00	27	71.50	------	----------	28	10.25	32.30	54.15	16.25	96.60
Hardin, Eldora	299	35	102	374.75	73	189.00	44	83.00	51	115.00	130	44.50	97.60	61.55	82.75	277.05
Harrison, Missouri Valley	248	27	57	220.00	16	129.00	47	106.00	------	----------	150	58.50	42.00	61.75	85.00	78.00
Henry, Mount Pleasant	180	55	99	370.50	70	417.00	98	273.00	41	140.00	386	182.50	56.00	120.00	100.00	92.00
Henry, Winfield	71	23	51	161.00	34	109.00	30	54.00	11	32.00	342	171.75	27.25	89.75	63.50	34.00
Humboldt, Humboldt	100	40	20	155.50	38	128.00	18	63.00	7	16.00	150	29.50	83.50	108.75	45.50	107.90
Iowa, Marengo	45	13	11	58.00	8	90.00	------	----------	15	13.00	47	16.50	11.25	12.50	10.50	88.90
Iowa, Victor	78	15	50	75.50	40	125.00	------	----------	18	25.50	40	15.00	40.80	32.25	18.75	48.50
Iowa, Williamsburg	147	27	24	110.00	15	96.00	22	20.00	17	30.00	216	84.00	46.75	25.30	89.75	38.30
Jackson, Maquoketa	174	44	61	265.50	52	228.60	58	93.00	27	47.50	98	42.50	88.15	59.60	170.40	----------
Jasper, Newton	91	14	68	214.00	52	184.00	46	183.00	16	39.50	144	85.25	49.00	83.50	149.50	131.13
Jefferson, Fairfield	219	8	6	24.00	12	52.00	------	----------	8	12.00	80	15.00	74.00	30.90	145.00	35.00
Johnson, Iowa City	82	33	76	303.00	10	41.00	60	191.00	10	27.50	30	13.25	27.75	26.75	47.00	44.25
Jones, Monticello	131	7	33	99.00	50	56.00	------	----------	------	----------	248	12.75	35.50	44.75	86.90	11.50
Jones, Anamosa	208	35	50	174.60	42	82.20	------	----------	15	15.20	50	4.80	68.00	----------	251.60	102.10
Keokuk, What Cheer	85	40	68	198.00	51	181.00	58	160.50	19	25.00	62	22.00	24.50	55.00	74.50	72.00
Kossuth, Algona	180	64	90	249.75	61	209.00	30	90.50	------	----------	90	38.00	128.00	50.00	103.00	331.75
Lee, Donnellson	52	14	20	69.00	22	93.00	20	52.00	36	50.00	65	21.00	43.60	37.50	45.00	----------
Lee, West Point	89	36	51	207.00	42	100.00	26	71.00	26	38.00	38	33.50	66.25	49.50	202.85	5.00
Linn, Central City	348	55	110	274.50	30	137.00	43	86.50	26	25.00	216	55.75	130.50	45.00	43.50	188.50
Linn, Marion	153	30	40	262.80	25	207.90	40	60.30	8	25.20	60	26.28	26.11	47.61	81.00	339.56
Louisa, Columbus Junction	80	19	60	334.50	29	203.06	42	100.00	9	34.50	300	229.00	104.75	49.25	97.00	185.70
Lyon, Rock Rapids	327	33	62	214.50	54	356.00	86	105.00	49	31.00	210	32.00	59.75	49.25	36.75	183.00
Mahaska, New Sharon	154	49	76	205.50	20	61.00	21	46.00	25	33.00	106	35.00	63.75	90.00	38.50	77.70
Marion, Pella	231	25	93	218.50	32	158.50	8	4.50	39	31.50	115	44.50	27.85	45.30	106.35	32.25
Marshall, Rhodes	90	25	50	107.00	40	112.00	------	----------	------	----------	50	19.50	66.25	48.00	24.00	109.25
Marshall, Marshalltown	1,300	106	172	557.00	84	571.00	450	301.25	60	144.00	740	166.65	209.00	84.25	289.50	555.40
Mills, Malvern	97	38	98	328.00	24	117.00	------	----------	9	10.00	81	45.25	54.00	67.75	138.25	----------

TABLE NO. II—CONTINUED

County	Number of exhibitors	Number of exhibitors live stock depts.	Horses		Cattle		Swine		Sheep		Poultry		Premiums paid Agricultural dept.	Premiums paid Pantry and Kitchen dept.	Premiums paid Fine Arts dept.	Premiums paid other depts.
			No. exhibited	Premiums paid	No. exhibited	Premiums paid	No. exhibited	Premiums paid	No. exhibited	Premiums paid	No. exhibited	Premiums paid				
Mitchell, Osage	53	18	28	102.00	76	253.00	22	62.00	23	69.00	36	17.70	51.50	18.00	3.50	220.00
Monona, Onawa	88	16	49	120.00	60	177.00	15	54.50	------	----------	16	5.25	150.75	41.25	121.25	----------
Monroe, Albia	184	53	76	412.00	36	146.00	28	60.00	41	70.00	75	33.00	63.50	52.80	250.00	112.70
Muscatine, West Liberty	290	110	125	624.00	75	465.00	60	156.00	40	98.00	200	74.00	166.25	109.25	226.00	229.00
Muscatine, Wilton	224	40	18	89.00	10	90.00	23	95.00	16	48.00	275	73.00	75.00	86.20	36.50	34.00
O'Brien, Sutherland	164	84	63	238.00	32	131.00	20	55.00	22	25.00	177	43.50	65.00	35.00	65.00	50.80
O'Brien, Sheldon	193	26	63	193.40	58	195.00	21	34.00	18	24.00	162	51.00	58.75	32.65	150.95	123.15
Page, Clarinda	286	41	119	471.20	27	126.40	84	188.60	109	169.40	171	22.70	98.75	68.75	144.15	73.50
Page, Shenandoah	194	35	100	483.00	17	134.00	65	143.00	10	30.50	225	56.25	64.00	54.75	169.75	135.00
Pocahontas, Fonda	185	51	60	170.75	40	160.00	10	27.00	7	6.75	150	56.25	73.50	45.00	91.75	124.00
Pottawattamie, Avoca	215	52	25	190.50	19	128.00	86	140.10	26	68.00	176	75.84	47.00	78.20	----------	62.50
Poweshiek, Malcom	118	27	34	148.00	------	----------	14	19.00	9	8.50	28	4.50	90.50	48.00	141.50	47.50
Poweshiek, Grinnell	142	20	42	197.50	11	37.00	74	106.00	18	22.00	170	65.80	94.25	54.70	172.90	32.70
Sac, Sac City	119	20	39	181.50	36	157.00	7	30.00	25	56.00	118	70.25	71.75	117.95	23.00	164.75
Shelby, Harlan	160	60	80	325.50	45	249.75	90	194.50	------	----------	92	60.75	40.00	25.50	97.00	----------
Sioux, Orange City	145	23	25	94.50	24	122.00	12	35.00	8	12.00	48	24.50	48.50	18.50	92.75	8.75
Story, Ames	190	53	120	412.00	65	263.00	36	58.00	53	101.00	100	98.25	----------	118.25	----------	18.00
Tama, Toledo	198	38	80	142.00	45	174.00	300	84.00	65	59.00	200	26.85	85.75	64.50	40.75	178.85
Taylor, Bedford	25	7	10	22.00	12	55.50	------	----------	------	----------	35	34.50	38.75	30.75	33.00	21.25
Van Buren, Milton	68	15	30	82.50	23	72.00	37	39.50	22	33.50	79	37.00	52.50	28.00	32.50	163.50
Wapello, Eldon	114	26	81	175.00	------	----------	49	71.00	34	60.00	13	5.00	35.25	22.25	51.50	20.00
Warren, Indianola	135	65	110	397.00	55	273.00	45	155.50	40	137.25	325	121.50	197.00	35.00	176.50	32.00
Wayne, Sewal	100	25	47	81.50	------	----------	2	3.00	5	5.50	12	2.00	17.50	18.50	52.25	10.00
Wayne, Clio	105	31	54	67.00	------	----------	------	----------	------	----------	2	.50	2.50	12.00	4.35	----------
Webster, Fort Dodge	101	20	31	94.25	31	108.00	39	103.00	9	25.00	65	35.20	89.25	103.00	----------	----------
Winnebago, Forest City	59	21	18	44.00	41	104.50	3	10.00	3	9.00	67	44.50	51.50	20.00	43.00	66.75
Winneshiek, Decorah	149	52	32	75.00	16	44.00	183	137.00	51	72.50	248	25.75	75.01	38.54	48.00	----------
Woodbury, Sioux City	428	120	257	966.00	249	2,982.00	1,640	1,148.50	161	231.00	355	70.50	1,491.70	192.00	577.00	361.00
Worth, Northwood	161	19	38	122.75	53	104.36	22	32.25	25	23.50	83	25.75	131.95	62.95	40.80	----------
Wright, Clarion	268	46	75	158.00	55	134.00	21	34.50	14	18.50	110	23.25	47.25	39.85	13.50	80.45
Total	16,578	3,553	5,483	$19,400.05	4,042	$21,247.98	5,746	$ 7,878.75	1,971	$ 3,463.30	12,119	$ 4,377.46	$ 9,905.55	$ 5,150.00	$ 8,171.28	$ 8,592.42

TABLE NO. III—TOTAL ATTENDANCE, TOTAL PAID ADMISSIONS AND ADMISSION FEES CHARGED AT COUNTY AND DISTRICT FAIRS IN IOWA FOR 1913.

County	Total attendance	Total paid admissions	Outside Gate Admissions			Grand Stand	Quarter Stretch	
			Adults	Vehicles	Children		Vehicles	Persons
Adams, Corning	5,000	4,200	25	25	15	15	15	25
Allamakee, Waukon	12,000	11,000	50	35	25	25	----	----
Audubon, Audubon	9,000	7,500	35	25	15	25	----	----
Benton, Vinton	12,000	10,321	35	25	----	15	----	----
Black Hawk, Waterloo	27,500	14,966	50	50	25	----	----	----
Boone, Ogden	3,000	2,800	35	----	25	10	10	10
Boone, Boone	7,000	6,473	35	25	10	25	15	15
Bremer, Waverly	46,000	34,672	35	25	25	15	----	----
Buchanan, Independence	8,943	8,427	35	15	15	15	15	15
Buena Vista, Alta	12,000	7,000	50	25	25	25	----	----
Butler, Allison	7,500	5,000	35	25	15	15	----	----
Calhoun, Rockwell City	10,000	9,000	50	25	----	25	----	25
Calhoun, Manson	10,004	9,816	35	25	15	25	----	----
Carroll, Carroll	10,311	7,711	35	25	----	25	----	25
Cass, Atlantic	20,000	15,000	35	35	15	25	25	25
Cass, Massena	2,500	2,400	25	25	15	15	----	15
Cedar, Tipton	11,000	8,532	35	35	15	15	----	15
Cerro Gordo, Mason City	32,609	20,809	35	25	----	25	*	25
Chickasaw, Nashua	10,000	6,700	35	25	25	15	----	----
Chickasaw, New Hampton	9,000	8,500	50	25	25	10	----	10
Clayton, Elkader	8,100	7,500	35	25	25	15	----	----
Clayton, National	5,000	2,500	35	25	15	15	----	----
Clayton, Strawberry Point	10,000	9,500	35	35	20	15	----	15
Clinton, DeWitt	16,000	15,000	35	35	15	25	----	25
Crawford, Arion	4,720	4,470	35	25	15	25	25	----
Davis, Bloomfield	18,000	16,000	25	10	15	10	----	10
Delaware, Manchester	5,000	4,500	35	25	15	15	----	----
Dickinson, Spirit Lake	4,000	3,586	35	25	25	25	----	----
Fayette, West Union	25,000	20,000	35	50	----	25	----	----
Franklin, Hampton	8,600	8,000	35	25	25	25	----	----
Greene, Jefferson	16,087	14,087	35	35	----	25	----	25
Grundy, Grundy Center	8,991	8,611	35	25	15	15	----	----
Guthrie, Guthrie Center	8,000	7,500	35	35	25	25	----	----
Hancock, Britt	10,000	9,000	35	50	----	25	----	25
Hardin, Eldora	15,000	12,626	35	35	15	15	----	----
Harrison, Missouri Valley	6,000	5,608	35	35	----	15	----	25
Henry, Mount Pleasant	20,000	18,000	35	25	----	15	25	10
Henry, Winfield	5,443	4,784	35	25	15	15	25	15
Humboldt, Humboldt	15,000	7,500	35	25	25	15	25	----
Iowa, Marengo	5,800	4,948	35	25	15	15	----	25
Iowa, Victor	4,000	3,450	35	35	15	25	----	25
Iowa, Williamsburg	2,600	2,560	25	25	15	25	----	25
Jackson, Maquoketa	17,000	10,000	35	25	15	25	25	25
Jasper, Newton	6,000	5,500	35	25	----	25	25	25
Jefferson, Fairfield	6,000	4,391	50	35	----	10	----	----
Johnson, Iowa City	7,000	6,000	35	35	25	25	15	15
Jones, Monticello	9,000	8,299	35	15	15	15	----	15
Jones, Anamosa	15,000	12,000	35	25	15	15	15	15
Keokuk, What Cheer	8,500	7,696	35	25	25	25	25	25
Kossuth, Algona	18,000	13,152	35	25	----	25	----	15
Lee, Donnellson	5,000	4,800	35	25	15	----	----	----
Lee, West Point	4,500	3,524	35	35	----	----	10	10
Linn, Central City	12,000	11,500	35	25	15	15	----	----
Linn, Marion	5,500	4,826	35	25	15	15	----	----
Louisa, Columbus Junction	15,000	10,000	35	25	25	15	----	15
Lyon, Rock Rapids	22,000	17,202	35	25	25	25	----	15
Mahaska, New Sharon	10,000	6,500	25	25	15	25	25	25
Marion, Pella	5,500	4,380	25	25	15	15	15	15
Marshall, Rhodes	7,000	2,850	25	25	15	----	----	----
Marshall, Marshalltown	37,255	35,000	35	25	15	25	----	25

County	Total attendance	Total paid admissions	Outside Gate Admissions			Grand Stand	Quarter Stretch	
			Adults	Vehicles	Children		Vehicles	Persons
Mills, Malvern	10,000	9,000	35	25	----	25	25	25
Mitchell, Osage	6,054	5,054	35	25	15	15	----	----
Monona, Onawa	4,650	4,400	35	----	25	25	----	25
Monroe, Albia	11,000	8,733	25	25	----	15	----	15
Muscatine, West Liberty	15,000	11,000	35	25	----	10	20	20
Muscatine, Wilton	10,000	7,000	35	35	20	15	15	15
O'Brien, Sutherland	7,700	7,100	35	35	25	15	----	15
O'Brien, Sheldon	8,000	7,300	50	25	25	25	----	----
Page, Clarinda	6,170	6,000	35	25	25	10	25	25
Page, Shenandoah	20,000	15,000	35	25	15	25	25	25
Pocahontas, Fonda	8,500	7,128	50	25	25	25	----	25
Pottawattamie, Avoca	6,500	6,025	35	35	15	25	----	25
Poweshiek, Malcom	6,000	4,726	35	25	15	25	----	25
Poweshiek, Grinnell	11,000	9,118	35	25	15	25	25	25
Sac, Sac City	9,025	8,075	35	25	25	25	25	25
Shelby, Harlan	9,000	6,954	35	25	20	25	----	25
Sioux, Orange City	4,700	4,250	35	35	10	25	*	25
Story, Ames	5,000	4,929	35	----	25	----	----	----
Tama, Toledo	10,000	7,500	35	25	15	15	25	25
Taylor, Bedford	6,000	5,900	35	25	15	15	----	25
Van Buren, Milton	6,000	5,000	25	25	----	10	10	10
Wapello, Eldon	6,500	5,016	50	25	15	10	----	10
Warren, Indianola	11,500	11,000	25	25	15	25	----	25
Wayne, Sewal	10,000	†	----	----	----	15	25	10
Webster, Fort Dodge	10,000	4,722	50	25	25	15	----	----
Winnebago, Forest City	6,000	5,500	35	25	25	25	----	----
Winneshiek, Decorah	11,000	10,500	35	----	15	15	----	----
Woodbury, Sioux City	61,482	50,958	50	----	25	25	----	25
Worth, Northwood	5,000	4,293	25	25	----	15	----	----
Wright, Clarion	6,700	6,000	35	25	25	25	----	15
Total attendance	1,008,344	805,503						

*None admitted.
†No outside gate admission.

THE FOLLOWING IS A SUMMARY OF THE ABOVE TABLE.

Admission Fees Paid	50 cents	35 cents	25 cents	20 cents	15 cents	10 cents	No Ch'ge
General Admission outside gates:							
Adults	11	67	11	----	----	----	1
Vehicles	3	19	59	----	2	1	6
Children	----	----	27	4	39	1	19
Grand stand admissions	----	----	42	1	35	7	5
Quarter stretch admissions:							
Persons	----	----	32	1	17	8	31
Vehicles	----	----	16	1	7	3	62

IOWA STATE FAIR AND EXPOSITION.

In my report of the fair I do not believe there is anything I could say that would add to the glory of the fifty-ninth Iowa state fair and exposition. The fair was so thoroughly reported by all the leading agricultural, live stock, and daily papers that you have all become acquainted with its success long before this.

Therefore, I am going to make a brief report concerning the exhibit, attendance, and receipts and disbursements. The printed report which will appear in a pamphlet now in the hands of the printer and later on in the Iowa Year Book of Agriculture, will contain some of the opinions of the fair by leading editorial writers, as chronicled in the agricultural and live stock press.

It is a difficult matter to judge what effect advancing the opening day from Saturday morning to Friday morning and closing Friday morning instead of Friday night, had on the attendance at this year's fair and on account of this change it is not possible to compare the daily attendance with that of last year. I am of the opinion that if the railroads would inaugurate special train service on Friday, Saturday and Sunday instead of waiting until Monday as they did this year the plan would work out satisfactorily. If the railroads do not see fit to do this it might work to disadvantage to the fair financially should we have rain on Monday and Tuesday of the second week. In so far as the live stock exhibitors are concerned the plan works to their advantage, giving them plenty of time to load out for the Minnesota and Nebraska state fairs. It also gave plenty of time for all other exhibitors to load out and reach home by Saturday.

The total attendance of the 1913 fair was 280,462, an increase of 8,439 over the fair of 1912.

The following is the attendance of the 1913 fair by days compared with 1911 and 1912 fairs.

	1913	1912	1911
Wednesday	3,849		
Thursday	8,608	3,090	4,074
*Friday	33,020	7,503	6,063
**Saturday	26,861	27,957	27,514
Sunday	25,211	18,902	17,612
Monday	58,045	40,602	37,309
Tuesday	66,465	60,379	64,699
Wednesday	40,972	58,643	60,580
Thursday	17,431	38,831	34,117
Friday		16,116	18,173
Total	280,462	272,023	270,682

*Children's day, 1913.

**Children's day, 1911 and 1912.

The exhibit at the 1913 fair was made by 1,598 exhibitors making a total of 16,170 entries in the various departments.

The total number of entries does not take into consideration entries in the machinery department. Every department was well represented and every building and barn filled and overflowing with exhibits.

The following table indicates the diversity of the exhibit and gives the number of exhibitors and number of entries in each department compared with the figures for the fair of 1912:

Department	1913 Fair No. of Exhibitors	1913 Fair No. of Entries	1912 Fair No. of Exhibitors	1912 Fair No. of Entries
Horses	148	2,028	143	2,002
Cattle	74	1,330	84	1,345
Swine	117	1,590	173	2,384
Sheep	24	647	27	646
Poultry	117	1,636	97	1,508
Agriculture	158	1,612	144	1,624
Pantry	144	2,206	149	2,122
Dairy	89	89	101	102
Horticulture	49	976	36	628
Floriculture	18	277	18	271
Fine Arts	220	2,779	216	2,805
School Exhibits	341		309	
Total	1,598	16,170	1,581	16,087

The exhibit in the horse department was made by 148 exhibitors who entered 993 head of horses, ponies and mules. This was an increase of five exhibitors and twenty-one head entered over last year.

There were 107 Iowa exhibitors; twenty-two Illinois; eight Missouri; four Wisconsin; three Nebraska; one Minnesota; one New Jersey and two from Canada.

A feature of the horse show was the excellent rings of yearling stallions and fillies shown for the prizes offered in the National Draft Horse Breeders' Futurity. Competent judges made the statement at the close of the show that it was the grandest ring of yearlings ever lined up in an American show ring. At the close of the show the owner of the first prize filly in the Percheron division accepted an offer of $2,000.00 made by Senator White of Leesburg, Virgina, and the filly was shipped to his farm in Virgina for breeding purposes.

The stable of hunters and jumpers and light harness horses entered by Hon. D. C. Cameron, Lieutenant Governor of Manitoba, Canada, created a great deal of interest and figured prominently in the awards at the night horse show.

On the whole the horse show was well balanced and afforded an excellent opportunity for the student and breeder to study the true types of the various breeds.

The following tabulation gives the number of horse exhibitors and number of horses entered in each class as compared with 1912:

Breed	1913 Fair No. of Exhibitors	1913 Fair No. of Horses Entered	1912 Fair No. of Exhibitors	1912 Fair No. of Horses Entered
Percheron	43	198	35	179
Clydesdale	11	64	15	90
Shire	17	112	15	100
Belgian	20	139	21	148
Draft Geldings and Mares	14	40	17	39
Standard Bred, etc.	26	104	31	120
Saddle Horses	26	80	16	60
Morgan	10	37	8	36
Hackney	7	11	4	10
Shetland Ponies	17	116	12	127
Welsh Ponies	4	25	2	14
Ponies other than Shetland	11	19	7	16
Mules	9	48	8	33
Total	148	993	143	972

The exhibit in the cattle division consisted of 591 head of beef cattle and 366 head of dairy cattle. This was an increase of 44 head in the dairy division and a decrease of 47 head in the beef classes. The total number entered in both divisions was 957 head, or about the same as last year with a slight falling off in the number of exhibitors.

We were short a few eastern show herds in the short-horn class on account of the show at Cleveland, Ohio, coming the same week. We were also short a few Red Polled herds from Nebraska on account of the drouth in that section this year.

The following tabulation gives the number of cattle exhibitors and number of cattle entered in each class as compared with 1912:

Breed	1913 Fair No. of Exhibitors	1913 Fair No. of Cattle Entered	1912 Fair No. of Exhibitors	1912 Fair No. of Cattle Entered
Short-horns	19	160	26	185
Herefords	12	168	13	157
Aberdeen Angus	14	126	7	70
Galloway	4	57	4	49
Polled Durham	3	29	5	44
Red Polled	3	51	9	133
Holstein-Friesian	8	104	4	91
Jersey	5	79	9	117
Guernsey	5	94	3	50
Ayrshire	2	35	1	20
Brown Swiss	2	42	3	44
Dutch Belted	1	12		
Total	74	957	84	960

The swine exhibit was made by 117 exhibitors who entered 1,590 head of swine. This is about 60% of the usual showing of swine at the Iowa state fair. The decrease was due to the prevalence of hog cholera throughout the state and by reason of the rule adopted by the Animal Health Commission requiring that all swine be vaccinated before exhibiting at county, district or state fairs. This rule would, if it were properly enforced and it was possible to comply with it, have its effect in preventing the spread of hog cholera. However, it worked an injustice to swine exhibitors last year for the reason that the State Serum Laboratory was just organizing and was not in a position to furnish the required amount of serum and exhibitors were unable to procure serum with which to vaccinate their swine; consequently they were prevented from showing. On the other hand we found a number of exhibitors who were not inclined to vaccinate. This not only reduced the swine show at the state fair but practically eliminated the swine exhibit at county and district fairs.

The following tabulation gives the number of swine exhibitors and number of swine entered in each class compared with 1912:

	1913 Fair		1912 Fair	
	No. of Exhibitors	No. of Swine Entered	No. of Exhibitors	No. of Swine Entered
Duroc Jersey	40	483	60	759
Poland China	34	384	62	725
Chester White	24	376	23	401
Hampshire	11	208	15	297
Berkshire	5	51	7	118
Yorkshire	4	72	2	63
Tamworth	1	16	1	21
Total	117	1,590	173	2,384

The sheep exhibit was made by 24 exhibitors who entered 647 head of sheep, or approximately the same number as shown last year. There was a good feeling among the exhibitors notwithstanding the fact that they were obliged to occupy the old pens again this year. Before the management can hope to greatly increase the sheep exhibit new quarters must be provided.

The poultry exhibit was made by 117 exhibitors who showed 1,636 birds, an increase of twenty exhibitors and 126 birds over last year. The educational exhibit, and the demonstration in poultry dressing at stated periods in the Poultry building, by the Extension department of Ames proved to be a valuable and attractive feature.

The exhibit of agricultural products was superior to exhibits in former years. The individual farm exhibits were especially good and presented the excellence and variety of Iowa's farm products in an attractive and educational exhibit. The exhibit of sheaf grains and grasses and the samples of threshed grain was much larger than last year. A competent judge, who has had considerable experience at national shows, made the statement that if he were allowed to pick samples from the various exhibits he would be willing to compete at any show in the world where quality of exhibits alone was taken into consideration.

There will be a recommendation made to the board at the annual meeting for a classification for county exhibits to be put up by the county advisors working under the Extension department and the United States government. This classification should insure twelve or fifteen excellent county exhibits which would greatly increase the variety and quantity of our agricultural exhibit another year.

The entire south end of the Agricultural building was devoted to the Horticultural exhibit this year. Something like 6,000 plates of fruit were on exhibition. This was supplemented by an exhibit of apples in commercial packages banked around the southwest corner of the building.

The dairy exhibit consisting of dairy apparatus and equipment, the winning samples of creamery butter, dairy butter and cheese, was educational and attractive. The time is not far off when this important industry will demand a separate exhibit building with many added features which the present space will not permit. At the booth of the Food and Dairy Commission information was dispensed pertaining to the modern methods of dairying and it also contained an exhibit of misbranded food stuffs of interest to the public. In the refrigerator was an exhibit contrasting the production of the average Iowa dairy cow with that of the world's champion. The block of butter representing the production of the average Iowa cow weighed 140 pounds with a value of $42.00, the huge block representing the production of the champion weighed 1,270 pounds, value $381.00. Such a contrast should be impressive and should encourage improvement of our dairy cattle.

The machinery exhibit was made by 341 exhibitors this year and it is safe to say that it was the largest and best arranged exhibit ever on the Iowa State Fair Grounds. The exhibitors seemed to take special interest this year in making their exhibit educational and attractive. The management found it impossible to accommodate all of the exhibitors with space in the lower part of the grounds and the overflow exhibits were obliged to occupy ground space east of the race track. It is hoped that the completion of the Machinery building may be realized at an early date, which will permit assembling this important exhibit all in one portion of the grounds.

At the State College building was staged a most interesting and instructive exhibit supplemented by a carefully prepared program of lectures and demonstrations. The subjects presented were: "Poultry Keeping;" "Domestic Science;" "Alfalfa Growing in Iowa;" "Pedigreed Seed Grain;" "Soils of Iowa and their Management;" "Hog Cholera;" and demonstrations showing the proper method of administering the serum treatment.

Among the many other interesting features was the state game farm, occupying about fifteen acres south of the camp grounds. The exhibit consisted of 2,500 of the several species of pheasants, wild ducks, geese, turkeys, and also an aquarium containing the several species of fish native to Iowa waters.

The Babies Health Contest, where 350 babies were entered and given scientific health tests proved to be one of the interesting and educational features of the fair.

The Boys' Camp consisted of 100 of Iowa's bright farm boys, one from each county in the state and one at large. Selection was made by a competitive essay contest written on the subject: "Farming in Iowa as an Occupation—Its Possibilities as Compared with other Vocations." These boys were brought to the fair, housed, fed, instructed and entertained at the expense of the fair. In return they assisted in the collection of tickets in the morning round-up and ushered at the amphitheater and live stock pavilion. At the close of the fair the boys submitted essays on "What I Saw and Learned at the Iowa State Fair." These essays are convincing proof that the Iowa State Fair should be classed as one of Iowa's great educational institutions. The lessons gained by the boys from practical demonstrations and object lessons will, no doubt, stay with them through life.

The amusement features provided—and which are necessary for the success of any well managed fair—were the best the management could secure. Four bands and one orchestra played seventeen concerts daily in the buildings and stands about the grounds.

The total attendance at the amphitheater in the afternoon was 44,180 and at night 54,821. These figures are surely an evidence that patrons of the Iowa State Fair appreciate the high class entertainment furnished. They also substantiate the contention of the fair managers in general that the patrons of the state fair demand a period for relaxation and rest of mind and body after spending several hours going about the grounds and studying the exhibits.

IMPROVEMENTS MADE DURING 1913.

The improvements made during the year 1913 were paid for from the anticipated receipts of the 1913 fair with the exception of the Women and Children's building which was not started until after the close of the fair. The total amount expended for permanent improvements from fair receipts amounted to $22,578.96. The principal items were $4,295.33 for taking care of the unsightly creek passing through the main portion of the grounds with a four foot cement storm sewer; $2,312.79 balance on 1912 contract for cross section of brick horse barn; $2,018.29 for installing two sets of sanitary toilets in the horse barn; $1,998.99 for new cement walks; $1,723.33 for moving and remodeling the old street car station for a permanent dining hall. The remodeling included an addition 16x80 feet for kitchen and serving rooms, cement floor throughout, steam boiler and cookers, large refrigerating room and other conveniences that make it the largest and most sanitary dining hall on the grounds. The capacity is approximately 450 people at one sitting. The other items for permanent improvements are itemized in the attached statement.

WOMEN AND CHILDREN'S BUILDING.

The Women and Children's building now in process of construction upon the fair grounds and for which the 35th general assembly made an appropriation of $75,000, will be completed by July 1, 1914. The building will be permanent in construction and a beautiful piece of architecture. The materials used are hard burned matt face brick with white stone trimmings and a red tile roof.

In addition to the ladies' rest rooms the building makes provisions for many other features of an educational nature.

A room 40x80 feet is set aside for the exhibit of oil paintings. This room will be absolutely fire proof and should be the means, with a proper revision of our premium list, of bringing out an excellent art exhibit another year. Other exhibit rooms are provided for, such as child welfare exhibit, etc. A model school room with proper entrances, cloak rooms, light and ventilation, and equipment is another feature. There is also an auditorium with a seating capacity of 500 for lecture purposes.

Commodious quarters are provided for the Babies' Health Contest with an auditorium seating 300 for those who wish to witness the tests and examinations. The room in which the examinations take place is well lighted and ventilated and is set off by a glass partition from the auditorium. One wing will be devoted to the day nursery and a sand floor play room for the older children. Opening off from the play room will be a modern equipped play ground for the little folks.

Provision is made for a sanitary, well equipped dining room in the basement. Surrounding the whole building, including the open court, will be a twenty foot porch which will provide an excellent resting place and will afford a beautiful view of the grounds.

In working out the plans for this building it was the purpose of the management to not only provide a resting place with all the necessaries for women and children but to provide features that will be attractive and educational to both.

VALUE OF FAIR GROUNDS PROPERTY.

In accordance with a resolution of the State Board of Agriculture calling for an inventory and valuation of the state's property under the control of the board, the Executive Committee, with the assistance of the architect employed by the board, made a careful inventory of all the frame buildings on the grounds and appraised their value.

The committee also employed—or rather a committee from the Des Moines Real Estate Exchange very generously donated their services—to appraise the value of the real estate.

The value of the permanent buildings built since 1902 is shown by the records of the department and from this the committee arrived at the present value of these buildings.

An invoice of all the loose tools and equipment was made by the Superintendent of Grounds. This work has not been entirely completed so that we can present an itemized inventory at this time. We found it an endless amount of work to make an accurate inventory and to arrive at accurate values on the frame structures and especially the loose tools and equipment. The committee also found it quite difficult to arrive at an annual depreciation on the various buildings and equipment. However, when the inventory is completed in accordance with the present plan it will give a complete record and appraised value of all the property under the control of the board, and the percentage of depreciation to be deducted from each building and the equipment annually.

Each year to the value of the buildings will be added any outlay for additions or repairs of a permanent nature and from this an annual depreciation will be deducted.

This will enable the department to publish as a part of the financial statement, the assets and liabilities, and the present worth of the fair ground property.

To give this convention some idea of the value of the state fair plant I present the following:

The committee that appraised the value of the real estate—283 1-3 acres—placed it at $375,070. The buildings and other property already placed upon the books as assets amount to $672,853. To this must be added $75,000 for the Women and Children's building now in process of construction and provided for by state appropriation, making the total valuation of the plant $1,122,923, which is approximately correct but may vary one way or the other when the inventory is complete.

"The present investment of the state of Iowa in the fair grounds property, including the original appropriation of $50,000, for the first frame buildings and the appropriations since 1902 for permanent buildings and additional ground total $475,111. The surplus or profit to the state on account of the investment amounts to $647,812." In other words each dollar invested by the state is represented by $2.40 worth of property. This surplus or profit is accounted for by the thousands of dollars invested annually in permanent improvements from the profits of the fair and from the increased value of the real estate.

FINANCES.

The total receipts of the 1913 fair were $188,832.10, an increase of $4,130,-89 over the 1912 fair. The receipts of fair from sources other than ticket sales amounted to $57,967.35, a decrease of $1,978.11 from the receipts from the same source of the 1912 fair. The receipts from ticket sales were $130,864.75, an increase of $5,109.00 over the sales of the 1912 fair.

The total disbursements of the 1913 fair were $146,740.02, or an increase of $2,771.13 over the 1912 fair. The net profit on the 1913 fair amounted to $42,092.08, a slight increase over the profit on the 1912 fair. The largest item of expense was for cash premiums paid, amounting to $61,069.90, an increase of $2,930.75 over amount paid in premiums at the 1912 fair. Other items of expense are set out in detail in the attached statement of receipts and disbursements.

ITEMIZED STATEMENT OF RECEIPTS AND DISBURSEMENTS OF THE IOWA DEPARTMENT OF AGRICULTURE FOR THE FISCAL YEAR ENDING NOVEMBER 30, 1913.

RECEIPTS.

Cash balance December 1, 1912		$ 615.63
Receipts from sources other than fair:		
Division of horse breeding fees	$ 9,765.00	
Fair ground collections:		
Stall rent speed barns	644.14	
Pasture rent	266.30	
Kindling sold	40.50	
Old lumber sold	6.55	
Light plant salvage	1,013.85	
Rent poultry cooping	150.00	
Rent, race track on Labor day	100.00	
Rent, race track for July race meeting	130.00	
Rent, swine pavilion for swine sale	15.00	
Rent, building for storage purposes	24.00	
Miscellaneous sales and collections	22.15	
Collections on account of 1912 stall and pasture rent bill	119.83	
Bills payable	3,000.00	
State Appropriation for insurance	1,000.00	
State Appropriation for Women and Children's Building	28,531.81	
State Appropriation, support of Department of Agriculture	1,255.00	
Insurance, damage to Exposition building	50.35	
Refund of money advanced for attractions	1,012.70	
Receipts on account of 1912 fair	298.17	
Balance on house sold at auction	19.00	
Mailing list of stallions	28.80	
Accounts payable (score card account)	283.90	
Duplicate collection from At Last Washer Co.	15.50	
Interest on bank account	206.12	
Total receipts other than fair or ticket sales		$ 47,998.67
Receipts of fair:		
Stall rent, horse department	$ 1,751.00	
Stall rent, cattle department	970.00	
Pen rent, swine department	784.00	
Pen rent, sheep department	118.00	
Pen rent, poultry department	379.25	
Space rental, poultry department	311.80	

Space rent, Machinery Department:			
Floor space, Machinery Building	$ 3,490.00		
Floor space, Power Hall	396.00		
Floor space, Automobile Show	1,121.40		
Outside Ground contracts	177.00	5,184.40	
Space rental, Agricultural Building		2,115.00	
Space rental, Dairy Department		452.50	
From sale of ice cream		1,227.00	
Space rental, Exposition Building		2,665.00	
Concession and Privilege Department:			
Concessions and Privileges	$19,979.75		
Midway shows, percentage	4,396.51		
Grand Stand and Stock Pavilion	1,125.85		
Score card privilege	334.05	25,836.16	
Entry fees, Speed department		4,453.80	
Forage sold		5,043.84	
Breeding Association, special premiums		5,535.49	
Advertising in premium list		799.00	
Telephone collections		258.56	
Boy's judging contest, entry fees		51.50	
Collections, Public Safety Department		29.05	
Miscellaneous receipts		2.00	
Total receipts of fair other than ticket sales		$ 57,967.35	
Ticket sales:			
Exhibitors tickets (sold by Sec'y)	$ 2,704.00		
Outside gates	86,891.25		
Day Amphitheater	18,228.50		
Night Amphitheater	19,537.25		
Live Stock and Hippodrome Show	3,503.75		
Total ticket sales		$130,864.75	
Total receipts of fair			$188,832.10
Grand total receipts			$237,446.40

DISBURSEMENTS.

Expense other than for Fair or Improvements:		
Publicity Department:		
H. N. Whitney, salary 5 months	$ 833.30	
Minnie Truax, salary 1¾ months	131.25	
Printing 45M "Greater Iowa"	509.70	
Postage on "Greater Iowa"	58.24	
Folding and enclosing "Greater Iowa"	11.15	
Cuts and electros	33.22	
Printing, miscellaneous	62.49	
Miscellaneous expense	8.99	$ 1,648.34
Division of Horse Breeding:		
Salaries and clerical hire	$ 2,208.75	
Printing report	312.00	
Postage on report	150.00	
Stallion examinations	55.21	
Year books	7.00	
Rent, typewriter	3.00	$ 2,735.96

Expense account 1912 fair		273.74	
Annual meeting and State Agricultural Convention		517.60	
Office furniture and fixtures		269.00	
Insurance premiums		2,445.09	
Exposition Bldg. repairs (covered by insurance)		50.33	
Misc. expense other than fair		197.51	
Refund At Last Washer Company collection		15.50	
Accounts payable (Score card account)		283.90	
Hauling poultry cooping to city		32.00	
Tilling rented ground		31.95	
Freight and drayage on light plant salvage		109.75	
July race meeting		131.29	
Money advanced on attractions		1,012.70	
Expense account death L. D. Bruner		133.50	
Bills payable and interest		3,130.00	
Futurity 1913		257.88	
Expense account 1914 fair		500.00	
Total expense other than fair or improvements			$ 13,776.04
Expense of fair other than premiums:			
Executive committee meetings		$ 1,166.50	
Special committee meetings		1,453.43	
Express, Telegraph and Telephone		351.94	
Postage		1,126.00	
Printing:			
Tickets for admission at all gates and side shows	$ 679.20		
Programs (horse show, etc.)	68.25		
Boys' camp circulars	57.50		
Greater Iowa envelopes	65.75		
Boys' judging contest folders and tabs	36.05		
Contracts and receipts books, all departments	50.95		
Entry blanks, all departments	72.50		
Ring, stall, poultry and camp ground numbers	133.20		
Premium list and advance sheets	1,244.00		
Envelopes for board members	38.80		
Premium list, school exhibit dpt.	45.00		
Loose leaf sheets for judges books	35.45		
Blank books	45.70		
Entry and premium tags	63.90		
Speed entry lists	42.00		
Babies' health contest, circulars, entry cards, etc.	25.20		
Ground and building plats	15.50		
Multigraph letters	9.45		
Premium and expense warrants.	25.00		
Miscellaneous printing	145.40	$ 2,898.80	

Advertising:		
481 country weekly papers	$ 2,916.18	
Plates for weekly papers	760.33	
Daily papers outside Des Moines	226.05	
Misc. papers and magazines	168.25	
Des Moines daily papers	1,339.18	
Agricultural and Live Stock papers	1,178.45	
Horse papers, adv. speed program	627.17	
H. N. Whitney, 5 months salary	833.30	
Minnie Truax, 4 months salary	290.00	
Extra reporters during fair, payroll	98.15	
Printing 45M 8 page "Greater Iowa"	364.40	
Postage on same and 10M heralds	114.79	
Folding and enclosing "Greater Iowa"	46.55	
8,200 hangers and window cards	505.00	
11,400 monthly calendars and post cards	136.10	
125M 2 color 8 page heralds	275.00	
8,125 outdoor signs and cloth banners	157.50	
Distribution, advertising matter	788.90	
Billboard service and date sheets	335.70	
Street car advertising	87.15	
Photos of 1912 and 1913 fairs	291.50	
Cuts and electros	119.52	
Large daily and band concert programs	81.50	
Trip on jobbers train	37.50	
25M gummed stickers (dates)	30.17	
Misc. advertising items	10.00	$ 11,818.34
Music and Attractions:		
Liberati's Band	$ 2,450.00	
Henry and His Band	1,550.00	
Fischer's Burlington Band	1,050.00	
Madrid Concert Band	480.00	
Graham's Orchestra	412.50	
Philharmonic Choir	525.00	
Pain's "Old Mexico" and fireworks	7,500.00	
Aeroplane flights	800.00	
Eight vaudeville acts	3,575.00	
Carver's High Diving Horses	1,000.00	
Expense account high diving act	77.60	
Six-in-Hand pony team	100.00	
Property men	87.60	$ 19,607.70
Light and power (current)		639.97
Light system (labor)		754.72

Water for month of August	633.95
Supplies, stationery, etc	588.02
Forage purchased	4,632.50
Salaries, secretary and clerical help	4,064.99
Board meetings	547.10
Assistants and foremen	926.94
Scavenger work, closets, etc	863.63
Track work	364.54
Oiling and work on streets	896.76
Misc. work during fair	227.20
Preparing and cleaning grounds for fair	1,277.05
Preparing and cleaning buildings for fair	796.20
Refund for stall rent, tickets, premiums, etc.	477.00
Payroll, President's Department	566.50
Payroll, Secretary's Department	581.75
Payroll, Treasurer's Department	1,604.20
Payroll, Concession Department	1,507.50
Payroll, Speed Department	909.95
Payroll, Horse Department	1,502.20
Payroll, Cattle Department	1,236.34
Payroll, Swine Department	539.70
Payroll, Sheep Department	369.25
Payroll, Poultry Department	385.05
Payroll, Machinery Department	653.90
Payroll, Agricultural Department	600.80
Payroll, Dairy Department	821.54
Payroll, Horticultural Department	293.07
Payroll, Floricultural Department	91.50
Payroll, Fine Arts Department	564.50
Payroll, School Exhibits	284.65
Payroll, Admission Department	2,789.00
Payroll, Police Department	4,627.54
Payroll, Ticket Audit Department	495.63
One-half expense State College Exhibit	796.18
Expense Boys' judging contest	69.80
Payroll and expense, Women's Rest Cottage	57.90
Expense, Boys' Encampment	1,447.91
Payroll and expense, Babies' health contest	292.45
Pioneer Day expense	149.00
Girls' Canning Club expense	60.60
Misc. expense account of fair	1,104.35
Plants and flowers	637.83
Fences, closing holes	24.75
Tanbark and sawdust	190.15
Freight and drayage	93.15
Outside show ring	31.50
Locks, turnstiles and registers	24.00
Placing and removing amphitheater chairs	135.45
Water distribution system	195.71
Hauling manure	299.00

Temporary horse barn	100.00	
Decorating buildings	900.00	
Closing buildings	165.00	
Ground supplies	371.25	
Rental tents, cots, bedding, etc.	972.63	
Premium ribbons and badges	847.87	
Telephone exchange	165.79	
Total expense of fair other than premiums		$ 85,670.12

CASH PREMIUMS PAID.

Horses	$ 15,612.50	
Cattle	12,623.00	
Swine	4,404.00	
Sheep	2,317.00	
Poultry	1,172.50	
Agriculture	4,173.00	
Pantry and kitchen	1,215.00	
Dairy	602.00	
Fruits	1,614.00	
Plants and flowers	1,439.40	
Fine Arts	1,658.50	
School exhibits	665.00	
Babies' health contest	304.00	
Scholarships Iowa State College	650.00	
Speed premiums	12,620.00	
Total premiums paid		$ 61,069.90
Total expense of fair		$146,740.02

PERMANENT IMPROVEMENTS.

Streets, grading and cinders	$ 1,000.50
Walks and curbing	1,998.99
Tools and implements	683.41
Women and Children's building	28,531.89
New closet, horse barn	2,018.29
Storm sewer	4,295.33
Misc. improvements	224.73
Horse barn, balance on 1912 contract	2,312.79
Additional land	80.57
Administration building improvements	111.61
Miscellaneous grading	845.27
Trees and shrubs (planting)	68.60
Game preserve, cottage and improvements	602.93
Floricultural building and green house	505.98
Water distribution system extensions	267.72
Telephone exchange 1911-12-13 extensions	559.44
Light system, extensions	379.38
Awnings for band stand and street car station	185.27

Transforming old street car station into dining hall and additions	1,723.33	
Post office building improvements	109.88	
Agricultural building, booths, tables, etc	233.13	
Police barn addition	79.00	
Ticket booths, rebuilding	59.17	
Drainage, extensions	698.73	
Sheep shed (new roofs)	406.55	
Farm house and barn	173.46	
Rest cottage improvements	73.15	
Band stand improvements	37.20	
Fire station improvements	26.85	
Hospital improvements	20.77	
New turnstiles and registers	254.25	
Bleachers and improvements	13.25	
Drinking fountains (bubbling cups and re-building)	103.25	
Swine pavilion (shower bath rooms)	36.41	
Cattle barn No. 4, improvements	8.13	
Speed office, improvements	7.50	
Fair ground equipment	131.47	
Plates, vases, etc. for Horticultural Department.	45.83	
Garbage cans (50 new)	125.00	
Lawn seats (100 new)	190.00	
Speed office furnishings	25.00	
Administration building furnishings	190.61	
Fly traps	37.50	
Carbon lamps	222.32	
Poultry building, cooping	211.70	
Hospital, furnishings	28.30	
South fence	28.90	
Grain boxes for Agricultural building	102.50	
Gas lights for camp grounds	108.00	
Paint in stock room	36.14	
Lumber in yard	890.87	
Total permanent improvements		$ 51,110.85

MAINTENANCE OF GROUNDS AND BUILDINGS.

Superintendent of grounds and assist's, salaries.	$ 1,359.45
Track work, except during fair	435.45
Water distribution system	67.20
Water except for August	316.30
Hauling manure	315.45
Painting metal roofs	584.12
Mowing grass and weeds	487.45
Keep of mule and horse teams	156.64
Implement and harness repairs	216.59
Street dragging, etc.	65.50
Sheet metal work, misc. buildings	136.58

Glass and putty for replacing broken glass	103.66	
Lumber for patch work	91.31	
Nails and hardware, patch work	81.04	
Misc. maintenance grounds and buildings	518.62	
Drainage repairs	43.20	
Fence repairs	88.75	
Cleaning grounds	120.60	
Cleaning buildings	41.02	
Moving and repairing misc. buildings	1,243.72	
Light system repairing	178.41	
Locks and turnstiles (repairs)	78.80	
Telephone system repairing	80.39	
Closets, repairing	288.02	
Walks, repairing	71.80	
Boiler repairing	143.60	
Total maintenance of grounds and buildings		$ 7,313.67
Grand total disbursements		$218,940.58

SUMMARY OF RECEIPTS AND DISBURSEMENTS AND RECONCILIATION OF ACCOUNT WITH TREASURER.

Receipts:			
Cash balance December 1, 1912			$ 615.63
Receipts from sources other than fair			47,998.67
Receipts of fair other than ticket sales		$ 57,967.35	
Receipts from ticket sales		130,864.75	
Total receipts of fair			188,832.10
Grand total receipts			$237,446.40
Disbursements:			
Disbursements other than fair or improvements		$ 13,776.04	
Expense of fair other than premiums	$85,670.12		
Premiums paid	61,069.90		
Total cost of fair		146,740.02	
Permanent improvements		51,110.85	
Maintenance of grounds and buildings		7,313.67	
Total disbursements			218,940.58
Balance on hand Nov. 30, 1913			$ 18,505.82
Warrants outstanding			253.50
Cash balance in treasury Nov. 30, 1913			$ 18,759.32

Some of the Winning Farm Teams at the 1913 Iowa State Fair.

CONDENSED FINANCIAL STATEMENT OF THE STATE DEPARTMENT

Showing Receipts and Disbursements of Iowa State Fair and Other Sources

Repairs, etc., and Net Profit of

YEAR	Receipts							
	Cash balance beginning of year	From state fair	From state appropriation	From other sources	Total receipts for year	Grand total	Premiums paid	Other fair expenses
1896	$ 116.79	$ 36,622.10	$ 7,000.00	$ 6,710.22	$ 50,332.32	$ 50,449.11	$ 16,404.29	$ 15,351.06
1901	28,616.55	50,712.91	1,000.00	2,753.82	54,466.73	83,083.28	19,203.83	13,925.87
1902	34,244.93	63.084.71	38,000.00	3,037.06	104,121.77	138,366.70	21,736.31	20,073.34
1903	30,372.25	59,838.56	1,000.00	3,140.79	63,979.35	94,351.60	23,813.13	21,989.56
1904	28,963.11	66,100.36	48,000.00	2,622.03	116,722.39	145,685.50	24,691.68	28,485.42
1905	29,657.23	84,786.25	1,000.00	2,840.92	88,627.17	118,284.49	28,730.89	34,408.62
1906	39,976.34	110,929.85	1,000.00	3,717.16	115,647.01	155,623.35	31,703.94	40,315.60
1907	50,294.87	104,356.75	76,000.00	5,452.34	185,908.09	236,103.96	35,504.79	43,647.20
1908	35,327.90	138,764.66	1,000.00	3,262.95	143,027.61	178,355.51	38,744.56	55,848.65
1909	25,328.73	137,307.40	101,000.00	5,257.42	243,564.82	268,893.55	42,262.76	66,963.12
1910	4,985.25	157,259.77	1,000.00	14,658.30	171,918.07	176,903.32	49,717.50	80,513.68
1911	7,283.44	179,549.67	78,000.00	5,275.72	262,825.39	270,108.83	56,264.35	81,603.16
1912	18,036.99	185,701.21	8,000.00	14,579.82	208,281.03	226,318.02	58,139.15	85,829.74
1913	615.63	188,832.10	30,786.81	17,211.86	236,830.77	237,446.40	61,069.90	85,670.12

OF AGRICULTURE FOR YEARS OF 1896 AND 1901 to 1913, INCLUSIVE.

and Expenditures, together with Amount Expended for Improvements,
Fair for Each of the Years Named.

Disbursements							Profits of Fair		
Improvements and repairs	Maintenance of grounds and buildings	Disbursements other than for fair	Total for year	Cash on hand	Previous year's business or outstanding warrants	Grand total	Total receipts of fair	Total expenses of fair	Net profits
$ 7,471.65	----------	$ 14,019.88	$ 53,247.28	$ 152.84	--------	$ 53,400.12	$ 36,622.10	$ 31,807.35	$ 4,814.75
13,378.73	----------	2,313.44	48,821.87	34,244.93	$ 16.48	83,683.28	50,712.91	33,129.70	17,583.21
62,457.12	----------	2,608.69	107,875.46	30,372.25	118.99	138,366.70	63,084.71	41,809.65	21,275.06
17,855.77	----------	1,704.83	65,363.29	28,963.11	25.20	94,351.60	59,838.56	45,802.69	14,035.87
59,641.11	----------	3,195.43	116,013.64	29,657.23	14.63	145,685.50	66,100.36	53,177.10	12,823.26
11,983.09	----------	3,345.27	78,447.87	39,976.31	139.81	118,281.40	84,786.25	63,139.51	21,646.74
30,035.33	----------	3,385.87	105,140.74	50,294.87	112.26	155,623.35	110,929.85	72,459.39	38,470.46
16,459.05	----------	5,043.03	200,654.07	35,327.90	176.19	236,103.96	104,356.75	79,151.99	25,204.76
53,663.09	----------	4,975.50	153,231.98	25,328.73	281.39	178,355.51	138,764.66	94,593.21	44,171.45
159,208.58	----------	4,379.91	263,814.37	4,985.25	232.39	268,893.55	137,307.40	109,225.88	28,081.52
24,300.98	----------	14,740.26	169,332.42	7,283.44	287.46	176,903.32	157,259.77	130,231.18	27,028.59
100,775.04	----------	4,429.29	252,071.84	18,036.99	209.85	270,108.83	179,549.67	137,867.51	41,682.16
71,056.56	$ 6,575.51	4,101.43	225,702.39	615.63	578.84	226,318.02	185,701.21	143,968.89	41,732.32
51,110.85	7,313.67	13,776.04	218,940.58	18,505.82	253.50	237,446.40	188,832.10	146,740.02	42,092.08

The following report of the Treasurer was read to the convention by the Secretary:

REPORT OF TREASURER.

G. S. GILBERTSON.

Gentlemen: I present herewith report of Receipts and Disbursements for the year ending November 30, 1913, as follows:

RECEIPTS.

Balance on hand November 30, 1912		$ 1,179.47
Received from sale of tickets as follows:		
General admissions (day)	$ 79,635.50	
General admissions (evening after 5 p. m.)	4,167.75	
Campers' tickets	3,088.00	
Day paddock and bleachers	3,803.50	
Day amphitheater (reserved at 50 cents)	12,475.00	
Day amphitheater (reserved at 75 cents)	1,332.75	
Evening paddock and bleachers	7,509.75	
Evening amphitheater (reserved at 50 cents)	10,904.00	
Evening amphitheater (reserved at 75 cents)	1,123.50	
Quarter stretch tickets	617.25	
Live stock pavilion (reserved)	2,956.00	
Live stock pavilion (standing)	547.75	
Exhibitors' tickets	2,704.00	
Total ticket sales	$130,864.75	$130,864.75
Received from Superintendents of Departments, as follows:		
Fair Grounds	$ 2,532.32	
Fine Arts	2,665.00	
Machinery	5,184.40	
Dairy	1,679.50	
Agriculture and Horticulture	2,115.00	
Horses	1,751.00	
Cattle	970.00	
Swine	784.00	
Sheep	118.00	
Poultry	691.05	
Concessions and Privileges	25,836.16	
Appropriations	30,786.81	
Speed	4,453.80	
Forage	5,043.84	
Special Association Premiums	5,535.49	
Horse Breeding	9,765.00	
Police	29.05	
Advertising in Premium Lists	799.00	
Bills payable	3,000.00	
Secretary Miscellaneous	2,020.48	
Interest	206.12	
Total receipts other than ticket sales	$105,966.02	$105,966.02
Grand total receipts		$238,010.24

DISBURSEMENTS.

Paid Expense Warrants	$158,096.92	
Paid Premium Warrants	61,154.00	
Balance on hand, November 30, 1913	18,759.32	
Total	$238,010.24	$238,010.24
Balance on hand		$ 18,759.32

Respectfully submitted this 9th day of December, 1913.

G. S. GILBERTSON,
Treasurer.

Des Moines, Iowa, December 8, 1913.

To the Directors of the State Board of Agriculture, City:

Gentlemen: This is to certify that there was on deposit in the Iowa Trust and Savings Bank on November 30, 1913, to the credit of G. S. Gilbertson, Treasurer of the Iowa Department of Agriculture, the sum of eighteen thousand seven hundred fifty-nine dollars and thirty-two cents ($18,759.32).

Yours very truly,
A. O. HAUGE,
Vice President.

PREMIUM WARRANTS ISSUED IN PAYMENT OF AWARDS AT THE IOWA STATE FAIR AND EXPOSITION AUGUST 20-28, 1913.

Date	No.	To Whom Issued	Amt.
Aug. 22, 1913	10782	J. W. Koontz	$100.00
Aug. 22, 1913	10783	J. H. McGowan	225.00
Aug. 22, 1913	19784	A. C. Johnson	25.00
Aug. 22, 1913	10785	W. A. Adams	25.00
Aug. 22, 1913	10786	R. C. Dunton	50.00
Aug. 22, 1913	10787	F. Marmet	75.00
Aug. 22, 1913	10788	D. Brant	15.00
Aug. 22, 1913	10789	George McKain	37.50
Aug. 22, 1913	10790	H. D. Talbot	22.50
Aug. 23, 1913	10791	F. Chapman	75.00
Aug. 23, 1913	10792	Wm. Vanderheyden	25.00
Aug. 23, 1913	10793	J. C. Dawson	22.50
Aug. 23, 1913	10794	Mike Bowen	37.50
Aug. 23, 1913	10795	A. F. Eberly	225.00
Aug. 23, 1913	10796	S. A. Potter	100.00
Aug, 23. 1913	10797	Geo. A. Wilson	50.00
Aug. 23, 1913	10798	C. I. Furness	160.00
Aug. 23, 1913	10799	Fred Robare	360.00
Aug. 23, 1913	10800	John Seeley	110.00
Aug. 23, 1913	10801	Fred Robare	100.00
Aug. 23, 1913	10802	Ralph O. Childs	80.00
Aug. 23, 1913	10803	W. B. Taylor	227.50
Aug. 23, 1913	10804	Luteer Willer	227.50
Aug. 23, 1913	10805	Y. Barnett	120.00
Aug. 23, 1913	10806	J. F. Patterson	30.00
Aug. 23, 1913	10807	Geo. McKain	22.50
Aug. 25, 1913	10808	E. S. Phillpot	15.00
Aug. 25, 1913	10809	W. M. Anderson	52.50
Aug. 25, 1913	10810	J. A. Griswold	70.00
Aug. 25, 1913	10811	Robt. McNeil	35.00
Aug. 25, 1913	10812	Sam Watkins	360.00
Aug. 25, 1913	10813	John M. Singleton	150.00
Aug. 25, 1913	10814	C. W. Reeder	25.00
Aug. 25, 1913	10815	J. C. Dawson	75.00
Aug. 25, 1913	10816	J. W. Thomas	45.00
Aug. 25, 1913	10817	H. D. Talbot	75.00
Aug. 25, 1913	10818	Mrs. M. Brown	37.50
Aug. 26, 1913	10819	J. D. Nelson	450.00
Aug. 26, 1913	19820	C. B. Clark	200.00
Aug. 26, 1913	10821	Chas. Hardy	275.00
Aug. 26, 1913	10822	H. J. Chandler	100.00
Aug. 26, 1913	10823	C. B. Dillenbeck	270.00
Aug. 26, 1913	10824	F. S. Jenkins	225.00
Aug. 26, 1913	10825	Wm. Vanderheyden	25.00
Aug. 26, 1913	10826	E. Biezley	120.00
Aug. 26, 1913	10827	Ed Farnsworth	25.00
Aug. 26, 1913	10828	Chet Kelley	50.00
Aug. 26, 1913	10829	Chet Kelley	400.00
Aug. 26, 1913	10830	A. Helgeson	22.50
Aug. 26, 1913	10831	James Leavitt	22.50
Aug. 26, 1913	10832	Mrs. T. H. Jones	15.00
Aug. 26, 1913	10833	E. Wagner	30.00

Date	No.	To Whom Issued	Amt.
Aug. 26, 1913	10834	A. Johnston	60.00
Aug. 26, 1913	10835	F. Chapman	15.00
Aug. 26, 1913	10836	Geo. McKain	60.00
Aug. 27, 1913	10837	Stanley Starr	50.00
Aug. 27, 1913	19838	C. E. Agler	100.00
Aug. 27, 1913	10839	Neary McVey	225.00
Aug. 27, 1913	10840	W. M. Anderson	15.00
Aug. 27, 1913	10841	F. Reynolds	50.00
Aug. 27, 1913	10842	G. H. Narigon	75.00
Aug. 27, 1913	10843	L. G. Pierce	75.00
Aug. 27, 1913	10844	Geo. Anderson	110.00
Aug. 27, 1913	10845	J. W. Burns	37.50
Aug. 27, 1913	10846	A. C. Wisecorn	100.00
Aug. 27, 1913	10847	Roy Owen	75.00
Aug. 27, 1913	10848	Dick McMahon	60.00
Aug. 27, 1913	10849	O. J. Mooers	25.00
Aug. 27, 1913	10850	R. R. Johnston	45.00
Aug. 27, 1913	10851	M. McInerney	50.00
Aug. 27, 1913	10852	John Carson	140.00
Aug. 27, 1913	10853	M. J. McKiefer	3.00
Aug. 27, 1913	10854	Mrs. T. H. Jones	22.50
Aug. 27, 1913	10855	H. D. Talbot	37.50
Aug. 27, 1913	10856	I. Ross Thompson	25.00
Aug. 27, 1913	10857	M. J. Brennan	70.00
Aug. 27, 1913	10858	C. E. Cameron	100.00
Aug. 27, 1913	10859	J. W. Scott	75.00
Aug. 27, 1913	10860	T. Chapman	75.00
Aug. 27, 1913	10861	H. McCroy	15.00
Aug. 27, 1913	10862	R. Spicer	15.00
Aug. 28, 1913	10863	Reeves Bros.	100.00
Aug. 28, 1913	10864	L. N. Miller	100.00
Aug. 28, 1913	10865	Jas. Leavitt	22.50
Aug. 28, 1913	10866	Geo. McKain	37.50
Aug. 28, 1913	10867	W. S. Corsa	75.00
Aug. 28, 1913	10868	G. M. Younglove	235.00
Aug. 28, 1913	10869	Joe McLaughlin	450.00
Aug. 28, 1913	10870	Oscar Ames	315.00
Aug. 28, 1913	10871	W. H. Smallinger	450.00
Aug. 28, 1913	10872	Geo. Wuef	200.00
Aug. 28, 1913	10873	Geo. Anderson	450.00
Aug. 28, 1913	10874	Wallace Estill & Son	100.00
Aug. 28, 1913	10875	Bert Harmon	50.00
Aug. 28, 1913	10876	A. L. Thomas	210.00
Aug. 28, 1913	10877	Omer Amundson	90.00
Aug. 28, 1913	10878	W. B. Taylor	475.00
Aug. 28, 1913	10879	Dick McMahon	490.00
Aug. 28, 1913	10880	C. E. Aigler	70.00
Aug. 28, 1913	10881	H. W. Brown	40.00
Aug. 28, 1913	10882	E. G. Bohanan	360.00
Aug. 28, 1913	10883	John McQuaig	300.00
Aug. 28, 1913	10844	C. A. Spencer	120.00
Aug. 29, 1913	10885	Jos. C. Brunk	170.00
Aug. 29, 1913	10886	Thos. Bass	559.00
Aug. 29, 1913	10887	Thos. Bass	36.00
Aug. 29, 1913	10888	G. K. Barton	20.00
Aug. 29, 1913	10889	Chas. Calamese	10.00
Aug. 29, 1913	10890	Hugh O. Cassidy	25.00
Aug. 29, 1913	10891	D. C. Cameron	788.00
Aug. 29, 1913	10892	F. W. Akers	16.00
Aug. 29, 1913	10893	A. W. Arnold	440.00
Aug. 29, 1913	10894	Anoka Farms	268.00
Aug. 29, 1913	10895	J. B. Ashby	54.00

Date		No.	To Whom Issued	Amt.
Aug.	29, 1913	10896	Achenbach Bros.	215.00
Aug.	29, 1913	10897	H. W. Ayers	203.00
Aug.	29, 1913	10898	H. W. Ayers	20.00
Aug.	29, 1913	10899	Allynhurst Farm	376.00
Aug.	29, 1913	10900	Anderson & Sons	272.00
Aug.	29, 1913	10901	Alden Anderson	121.00
Aug.	29, 1913	10902	Ashby, Hockett & Gardner	33.00
Aug.	29, 1913	10903	John Alexander	108.00
Aug.	29, 1913	10904	Horace L. Anderson	95.00
Aug.	29, 1913	10905	Otto V. Battles	325.00
Aug.	29, 1913	10906	G. H. Burge	173.00
Aug.	29, 1913	10907	W. J. Brinager & Son	111.00
Aug.	29, 1913	10908	J. M. Brown	10.00
Aug.	29, 1913	10909	Geo. Baker	50.00
Aug.	29, 1913	10910	Raymond E. Brown	40.00
Aug.	29, 1913	10911	T. B. Bowman & Sons	28.00
Aug.	29, 1913	10912	R. R. Blake	30.00
Aug.	29, 1913	10913	F. M. Buck	84.00
Aug.	29, 1913	10914	H. E. Browning	191.00
Aug.	29, 1913	10915	J. E. Beckendorf	22.00
Aug.	29, 1913	10916	John E. Buswell	205.00
Aug.	29, 1913	10917	John A. Ballou	13.00
Aug.	29, 1913	10918	Chas. Bachman	13.00
Aug.	29, 1913	10919	E. L. Bitterman	102.00
Aug.	29, 1913	10920	E. F. Brown	5.00
Aug.	29, 1913	10921	E. S. Barker	265.00
Aug.	29, 1913	10922	J. Hill Barnes	15.00
Aug.	29, 1913	10923	C. A. Brook	37.00
Aug.	29, 1913	10924	A. C. Binnie	137.00
Aug.	29, 1913	10925	A. J. Banks	2.00
Aug.	29, 1913	10926	Crawford & Griffin	105.00
Aug.	29, 1913	10927	C. C. Croxen	176.00
Aug.	29, 1913	10928	W. S. Corsa	583.00
Aug.	29, 1913	10929	E. M. Cassady	150.00
Aug.	29, 1913	10930	J. P. Cudahy	309.00
Aug.	29, 1913	10931	J. M. Curtice	191.00
Aug.	29, 1913	10932	C. D. and E. F. Caldwell	201.00
Aug.	29, 1913	10933	Francis Culbertson	3.00
Aug.	29, 1913	10934	Wm. Crownover	463.00
Aug.	29, 1913	10935	Carpenter & Carpenter	205.00
Aug.	29, 1913	10936	S. M. Croft & Sons	181.00
Aug.	29, 1913	10937	Capital View Ranche	193.60
Aug.	29, 1913	10938	Capital View Ranche	35.40
Aug.	29, 1913	10939	J. K. Dering	315.00
Aug.	29, 1913	10940	C. W. Cook	180.00
Aug.	29, 1913	10941	G. A. Chaffee	259.00
Aug.	29, 1913	10942	Geo. J. C. Copestake	105.95
Aug.	29, 1913	10943	Geo. J. C. Copestake	9.05
Aug.	29, 1913	10944	Ed Crawford	40.00
Aug.	29, 1913	10945	J. L. Dickerson	4.00
Aug.	29, 1913	10946	W. H. Dunbar	7.00
Aug.	29, 1913	10947	W. F. Desenberg	14.00
Aug.	29, 1913	10948	Dr. M. W. Downing & Bro.	86.00
Aug.	29, 1913	10949	Dr. M. W. Downing & Bro.	14.00
Aug.	29, 1913	10950	John Dunbar	99.00
Aug.	29, 1913	10951	H. C. Davis	112.00
Aug.	29, 1913	10952	C. B. Dannen & Son	86.00
Aug.	29, 1913	10953	Dunhams	160.00
Aug.	29, 1913	10954	W. L. DeClow	18.00
Aug.	29, 1913	10955	Deierling & Otto	130.00

Date	No.	To Whom Issued	Amt.
Aug. 29, 1913	10956	B. F. Davidson	92.00
Aug. 29, 1913	10957	Jacob K. Eshelman	10.00
Aug. 29, 1913	10958	Jesse Engle & Sons	36.00
Aug. 29, 1913	10959	W. C. Estes	210.00
Aug. 29, 1913	10960	G. L. Emmert & Sons	22.00
Aug. 29, 1913	10961	Geo. Eggert	143.00
Aug. 29, 1913	10962	F. H. Ehlers	132.00
Aug. 29, 1913	10963	Chas. Escher, Jr.	199.00
Aug. 29, 1913	10964	Harry Eddingfield	156.00
Aug. 29, 1913	10965	C. H. Eversole	20.00
Aug. 29, 1913	10966	Ethelwood Farms	230.00
Aug. 29, 1913	10967	M. R. Evans	25.00
Aug. 29, 1913	10968	M. R. Evans	16.00
Aug. 29, 1913	10969	H. Harris Ford	240.00
Aug. 29, 1913	10970	R. F. French	110.00
Aug. 29, 1913	10971	A. W. and F. E. Fox	185.00
Aug. 29, 1913	10972	R. F. Fantz	87.00
Aug. 29, 1913	10973	R. M. Fantz & Sons	14.00
Aug. 29, 1913	10974	A. G. Forsbeck	94.00
Aug. 29, 1913	10975	J. S. Fawcett & Sons	129.00
Aug. 29, 1913	10976	W. S. Fox	65.00
Aug. 29, 1913	10977	Nell Fabyan	209.00
Aug. 29, 1913	10978	Roy E. Fischer	28.00
Aug. 29, 1913	10979	O. S. Gibbons & Son	257.00
Aug. 29, 1913	10980	W. E. Graham	30.00
Aug. 29, 1913	10981	C. G. Good	43.00
Aug. 29, 1913	10982	John Graham & Son	150.00
Aug. 29, 1913	10983	C. B. Grimes	111.00
Aug. 29, 1913	10984	G. W. Grigsby	63.00
Aug. 29, 1913	10985	George Gawley	24.00
Aug. 29, 1913	10986	Wm. Galloway Farms	75.15
Aug. 29, 1913	10987	Wm. Galloway Farms	36.85
Aug. 29, 1913	10988	O. Harris	397.00
Aug. 29, 1913	10989	Wm. Herkelman	246.00
Aug. 29, 1913	10990	Chester A. Hanes	45.00
Aug. 29, 1913	10991	W. S. Hill	340.00
Aug. 29, 1913	10992	Haussler Bros.	305.00
Aug. 29, 1913	10993	C. S. Hechtner	300.15
Aug. 29, 1913	10994	C. S. Hechtner	36.85
Aug. 29, 1913	10995	Frank E. Huston	155.00
Aug. 29, 1913	10996	Hanks & Bishop	26.00
Aug. 29, 1913	10997	R. G. Harding	20.00
Aug. 29, 1913	10998	Hendricks & Robinson	78.00
Aug. 29, 1913	10999	Mrs. Emile Hunt	4.00
Aug. 29, 1913	11000	F. L. Hutson & Son	285.00
Aug. 29, 1913	11001	Hildebrand Bros.	20.00
Aug. 29, 1913	11002	W. V. Hixson	434.00
Aug. 29, 1913	11003	Luther Huston	15.00
Aug. 29, 1913	11004	Iowana Farms	18.00
Aug. 29, 1913	11005	Iowana Farms	244.00
Aug. 29, 1913	11006	Iowana Farms	254.00
Aug. 29, 1913	11007	Chas. Irvine	357.00
Aug. 29, 1913	11008	Iowa State College	55.90
Aug. 29, 1913	11009	Iowa State College	4.10
Aug. 29, 1913	11010	C. F. Jones	15.00
Aug. 29, 1913	11011	J. T. Judge	50.00
Aug. 29, 1913	11012	E. H. Jackson	10.00
Aug. 29, 1913	11013	D. M. Johnston	30.00
Aug. 29, 1913	11014	Orlando Jacobs	8.00
Aug. 29, 1913	11015	E. L. Karr	42.00
Aug. 29, 1913	11016	F. S. King Bros. Co.	132.00

Date	No.	To Whom Issued	Amt.
Aug. 29, 1913	11017	E. R. Kindred	10.00
Aug. 29, 1913	11018	B. F. Kunkle	195.00
Aug. 29, 1913	11019	John Krambeck	10.00
Aug. 29, 1913	11020	Thos. F. Kent	127.00
Aug. 29, 1913	11021	Economy Stock Farm	18.00
Aug. 29, 1913	11022	Joe Kramer	19.00
Aug. 29, 1913	11023	J. W. Larabee	195.00
Aug. 29, 1913	11024	Grant Lynn	2.00
Aug. 29, 1913	11025	J. H. Lachmiller	10.00
Aug. 29, 1913	11026	Leemon Stock Farm	172.00
Aug. 29, 1913	11027	Leemon Stock Farm	4.00
Aug. 29, 1913	11028	Henry Lefebure	160.00
Aug. 29, 1913	11029	W. W. Marsh	352.00
Aug. 29, 1913	11030	J. B. Mackoy	222.00
Aug. 29, 1913	11031	Morris Bros.	65.00
Aug. 29, 1913	11032	Morgan Horse Farm	100.00
Aug. 29, 1913	11033	Will Michael	3.00
Aug. 29, 1913	11034	J. H. Miller	315.00
Aug. 29, 1913	11035	J. E. Meharry	330.00
Aug. 29, 1913	11036	J. A. Mason	111.00
Aug. 29, 1913	11037	P. W. Moffatt	180.00
Aug. 29, 1913	11038	Clayton Messenger	160.00
Aug. 29, 1913	11039	T. I. Manley	57.00
Aug. 29, 1913	11040	W. J. Miller	129.00
Aug. 29, 1913	11041	L. H. Manley	58.00
Aug. 29, 1913	11042	W. A. McHenry	320.00
Aug. 29, 1913	11043	Geo. McKerrow & Sons	283.00
Aug. 29, 1913	11044	C. W. McDermott	75.00
Aug. 29, 1913	11045	R. G. McDuff	3.00
Aug. 29, 1913	11046	H. G. McMillan & Sons	496.00
Aug. 29, 1913	11047	Warren T. McCray	291.00
Aug. 29, 1913	11048	C. L. McClellan	47.00
Aug. 29, 1913	11049	E. L. Nagle & Son	88.00
Aug. 29, 1913	11050	M. J. Nelson	23.00
Aug. 29, 1913	11051	J. H. Nissen	34.00
Aug. 29, 1913	11052	D. Nauman	20.00
Aug. 29, 1913	11053	C. A. Nelson	274.00
Aug. 29, 1913	11054	L. C. Olaff	137.00
Aug. 29, 1913	11055	C. W. Overton	12.00
Aug. 29, 1913	11056	Isaac Overton	22.00
Aug. 29, 1913	11057	O. E. Osborn	10.00
Aug. 29, 1913	11058	Chas. E. Perkins	40.00
Aug. 29, 1913	11059	R. and W. Postle	123.00
Aug. 29, 1913	11060	R, and W. Postle	3.00
Aug. 29, 1913	11061	Ben Phillips	10.00
Aug. 29, 1913	11062	Jas. Pedley	40.00
Aug. 29, 1913	11063	D. H. Paul	120.00
Aug. 29, 1913	11064	Ed Person	3.00
Aug. 29, 1913	11065	Geo. A. Phillipi	65.00
Aug. 29, 1913	11066	F. G. Paul	118.00
Aug. 29, 1913	11067	Carl A. Rosenfeld	283.00
Aug. 29, 1913	11068	S. Rail & Sons	115.00
Aug. 29, 1913	11069	W. T. Roberts & Son	33.00
Aug. 29, 1913	11070	H. L. Russell	24.00
Aug. 29, 1913	11071	J. L. Risley	6.00
Aug. 29, 1913	11072	H. H. Reed	20.00
Aug. 29, 1913	11073	John Rensink	8.00
Aug. 29, 1913	11074	Archibald Smith	90.00
Aug. 29, 1913	11075	G. W. Smith	63.00
Aug. 29, 1913	11076	Carl Sparboe	13.00
Aug. 29, 1913	11077	Chas. and V. A. Summers	79.00

Date		No.	To Whom Issued	Amt.
Aug.	29, 1913	11078	Adam Seitz	437.00
Aug.	29, 1913	11079	W. Z. Swallow	55.00
Aug.	29, 1913	11080	Mrs. A. Stirling	90.00
Aug.	29, 1913	11081	L. N. and O. B. Sizer	460.80
Aug.	29, 1913	11082	L. N. and O. B. Sizer	29.20
Aug.	29, 1913	11083	Arthur Spear	44.00
Aug.	29, 1913	11084	Chas. J. Shepard	2.00
Aug.	29, 1913	11085	Seward Brothers	20.00
Aug.	29, 1913	11086	O. G. Soderberg	432.00
Aug.	29, 1913	11087	C. F. Stewart	10.00
Aug.	29, 1913	11088	Frank M. Shaw	50.00
Aug.	29, 1913	11089	V. J. Smith	15.00
Aug.	29, 1913	11090	R. W. Smith	5.00
Aug.	29, 1913	11091	Chas. Seibert	15.00
Aug.	29, 1913	11092	Allen L. Smith	20.00
Aug.	29, 1913	11093	C. A. Saunders	564.00
Aug.	29, 1913	11094	H. B. Smith	105.00
Aug.	29, 1913	11095	A. B. Somerville	73.00
Aug.	29, 1913	11096	J. M. Stewart	36.00
Aug.	29, 1913	11097	I. J. Swain & Sons	113.00
Aug.	29, 1913	11098	W. W. Seeley	25.00
Aug.	29, 1913	11099	M. Shivers	18.00
Aug.	29, 1913	11100	O. R. Stevens	52.00
Aug.	29, 1913	11101	Saltone Stock Farm	207.00
Aug.	29, 1913	11102	Frank Reed Sanders	380.00
Aug.	29, 1913	11103	P. H. Sheridan	3.00
Aug.	29, 1913	11104	Truman's Pioneer Stud Farm	443.00
Aug.	29, 1913	11105	W. A. Taylor & Son	93.00
Aug.	29, 1913	11106	Cyrus A. Tow	672.00
Aug.	29, 1913	11107	I. Ross Thompson	50.00
Agu.	29, 1913	11108	J. W. Thompson	95.00
Aug.	29, 1913	11109	John Thompson	6.00
Aug.	29, 1913	11110	W. W. Vaughn	33.00
Aug.	29, 1913	11111	John Vought	18.00
Aug.	29, 1913	11112	John W. Vigars	4.00
Aug.	29, 1913	11113	W. W. Weston & Sons	143.50
Aug.	29, 1913	11114	Whiting Farm	65.00
Aug.	29, 1913	11115	Wilkinson Bros.	200.00
Aug.	29, 1913	11116	F. J. Waltman	156.00
Aug.	29, 1913	11117	John H. Williams	135.00
Aug.	29, 1913	11118	E. C. Wilson	106.00
Aug.	29, 1913	11119	F. F. and V. G. Warner	54.00
Aug.	29, 1913	11120	Bert B. Welty	85.00
Aug.	29, 1913	11121	Waltemeyer Bros.	191.00
Aug.	29, 1913	11122	Hozea Wilson	10.00
Aug.	29, 1913	11123	J. G. Westrope	20.00
Aug.	29, 1913	11124	W. A. Wickersham	70.00
Aug.	29, 1913	11125	Wilcox & Stubbs	152.00
Aug.	29, 1913	11126	R. J. Wallace & Sons	45.00
Aug.	29, 1913	11127	Russell Yates	15.00
Aug.	29, 1913	11128	P. W. Young	68.00
Aug.	29, 1913	11129	D. C. Cameron	22.00
Aug.	29, 1913	11130	E. B. Dodson	25.00
Aug.	29, 1913	11131	Wallace Estill & Son	246.00
Aug.	29, 1913	11132	Wallace Estill & Son	14.00
Aug.	29, 1913	11133	E. A. Elliott	55.00
Aug.	29, 1913	11134	Hanson's Poultry Farm	50.00
Aug.	25, 1913	11135	C. E. Cameron	200.00
Aug.	29, 1913	11136	Ira Hall	50.00
Aug.	29, 1913	11137	Geo. A. Heyl & Son	437.00
Aug.	29, 1913	11138	Hamilton Bros.	310.00

Date	No.	To Whom Issued	Amt.
Aug. 29, 1913	11139	J. A. Knott	45.00
Aug. 29, 1913	11140	C. E. Monahan	60.00
Aug. 29, 1913	11141	O. J. Mooers	789.00
Aug. 29, 1913	11142	O. J. Mooers	28.00
Aug. 29, 1913	11143	O. J. Mooers	18.00
Aug. 29, 1913	11144	H. H. Polk	75.00
Aug. 29, 1913	11145	J. R. Peak & Son	815.00
Aug. 29, 1913	11146	Pabst Stock Farm	645.00
Aug. 29, 1913	11147	Bruce Robinson	45.00
Aug. 29, 1913	11148	B. F. Redmon	40.00
Aug. 29, 1913	11149	H. Rasmussen	265.00
Aug. 29, 1913	11150	C. R. C. Wells	30.00
Aug. 29, 1913	11151	Wild Rose Farm	715.00
Sept. 3, 1913	11152	Chas. Lowder	35.00
Sept. 6, 1913	11153	Bruce Robinson	10.00
Sept. 12, 1913	11154	Ruth Pickell	13.00
Sept. 13, 1913	11155	Marjorie Page	60.00
Sept. 13, 1913	11156	Homer Howell	60.00
Sept. 13, 1913	11157	John Leroy Brown	10.00
Sept. 13, 1913	11158	Keith Wolf Cooper	5.00
Sept. 13, 1913	11159	Eugene Allen	2.00
Sept. 13, 1913	11160	Franz Harvey	10.00
Sept. 13, 1913	11161	Dale Leroy Kane	5.00
Sept. 13, 1913	11162	Leslie Everndon	2.00
Sept. 13, 1913	11163	Charlotte Holmes	10.00
Sept. 13, 1913	11164	Laverne Luther	5.00
Sept. 13, 1913	11165	Olive Louis Graham	2.00
Sept. 13, 1913	11166	Myrnell Knauer	10.00
Sept. 13, 1913	11167	Helen Utter	5.00
Sept. 13, 1913	11168	Marie Harris	2.00
Sept. 13, 1913	11169	Gerald Edwin Geise	10.00
Sept. 13, 1913	11170	Conrad Lillie	5.00
Sept. 13, 1913	11171	Reveer Elliott	2.00
Sept. 13, 1913	11172	Jesse Wiseman	10.00
Sept. 13, 1913	11173	Frank W. Stewart	5.00
Sept. 13, 1913	11174	Chas. Simpson	2.00
Sept. 13, 1913	11175	Meredith Thomas	10.00
Sept. 13, 1913	11176	Helen Irwin	5.00
Sept. 13, 1913	11177	Marjorie Kline	2.00
Sept. 13, 1913	11178	Josephine Buckman	5.00
Sept. 13, 1913	11179	Mary Reed	2.00
Sept. 13, 1913	11180	Phillip Clow Wistrum	10.00
Sept. 13, 1919	11181	Edward Krudimeir	5.00
Sept. 13, 1913	11182	Harvison Holland	2.00
Sept. 13, 1913	11183	Gerald Moffet	5.00
Sept. 13, 1913	11184	Paul Hummell	2.00
Sept. 13, 1913	11185	Marian Jacobson	10.00
Sept. 13, 1913	11186	Virginia Johnston	5.00
Sept. 13, 1913	11187	Gretchen Yoder	2.00
Sept. 13, 1913	11188	Jeanne Frink	10.00
Sept. 13, 1913	11189	Mary Elizabeth Erwin	5.00
Sept. 13, 1913	11190	Judith Evans	2.00
Sept. 13, 1913	11191	Hilda Anderson	4.00
Sept. 13, 1913	11192	Alden Anderson	3.00
Sept. 13, 1913	11193	M. Anderson	2.94
Sept. 13, 1913	11194	Mrs. N. B. Ashby	19.00
Sept. 13, 1913	11195	Verne E. Agro	9.50
Sept. 13, 1913	11196	J. C. Ash	8.00
Sept. 13, 1913	11197	A. L. Anderson	29.00
Sept. 13, 1913	11198	H. U. Arthur & Sons	4.00
Sept. 13, 1913	11199	D. E. Ackoss	.50

Date	No.	To Whom Issued	Amt.
Sept. 13, 1913	11200	Jesse Alexander & Co.	37.00
Sept. 13, 1913	11201	Wm. Ambrose	2.94
Sept. 13, 1913	11202	W. H. Anderson	14.72
Sept. 13, 1913	11203	Mrs. J. H. Abernathy	7.00
Sept. 13, 1913	11204	Mary Anderson	1.00
Sept. 13, 1913	11205	Frances C. Adams	.50
Sept. 13, 1913	11206	Florence Alexander	6.00
Sept. 13, 1913	11207	Mrs. Jesse Alexander	22.00
Sept. 13, 1913	11208	Mrs. Lew Arntz	2.00
Sept. 13, 1913	11209	E. O. Ballman	6.87
Sept. 13, 1913	11210	Raymond E. Brown	2.00
Sept. 13, 1913	11211	Mrs. M. Bredimus	66.00
Sept. 13, 1913	11212	C. F. Bollig	6.87
Sept. 13, 1913	11213	Gertrude Brereton	16.50
Sept. 13, 1913	11214	Joel Blomster	8.84
Sept. 13, 1913	11215	John A. Bettahauser	1.96
Sept. 13, 1913	11216	J. W. Bittenbender	101.00
Sept. 13, 1913	11217	E. J. Butterfield	7.00
Sept. 13, 1913	11218	Aug. Beck	3.00
Sept. 13, 1913	11219	L. W. Bell	8.50
Sept. 13, 1913	11220	Mrs. O. C. Bierma	3.00
Sept. 13, 1913	11221	L. Bartlett	7.00
Sept. 13, 1913	11222	Mrs. H. I. Branson	2.00
Sept. 13, 1913	11223	J. M. Brown	2.00
Sept. 13, 1913	11224	A. & J. W. Boyt	7.00
Sept. 13, 1913	11225	A. A. Bennett	18.00
Sept. 13, 1913	11226	Armien Bruns	78.34
Sept. 13, 1913	11227	Matt Baker	5.00
Sept. 13, 1913	11228	Mrs. C. M. Bushay	20.00
Sept. 13, 1913	11229	G. B. Black	24.00
Sept. 13, 1913	11230	Brown Poultry Co.	5.00
Sept. 13, 1913	11231	Mrs. W. S. Beatty	7.00
Sept. 13, 1913	11232	C. A. Barquist	7.00
Sept. 13, 1913	11233	E. B. Benson	3.00
Sept. 13, 1913	11234	Francis Blanchard	21.50
Sept. 13, 1913	11235	Dick Bruns	6.00
Sept. 13, 1913	11236	W. R. Bittenbender	25.00
Sept. 13, 1913	11237	W. B. Barnes	5.00
Sept. 13, 1913	11238	Mrs. W. B. Barnes	3.50
Sept. 13, 1913	11239	Mrs. O. O. Brewbaker	12.55
Sept. 13, 1913	11240	J. J. Brunner	10.80
Sept. 13, 1913	11241	F. W. Bremer	9.81
Sept. 13, 1913	11242	Mrs. M. A. Bishop	17.00
Sept. 13, 1913	11243	J. H. Burgy	2.00
Sept. 13, 1913	11244	Annie Bishard	7.50
Sept. 13, 1913	11245	Vera I. Betts	4.00
Sept. 13, 1913	11246	Mrs. J. L. Betts	2.00
Sept. 13, 1913	11247	Hazell M. Betts	3.50
Sept. 13, 1913	11248	M. L. Bevan	9.00
Sept. 13, 1913	11249	A. H. Bakehouse	169.32
Sept. 13, 1913	11250	John Blake	5.00
Sept. 13, 1913	11251	A. W. Barrickman	8.00
Sept. 13, 1913	11252	Ellsworth H. Bates	5.00
Sept. 13, 1913	11253	Mrs. G. H. Botsford	6.00
Sept. 13, 1913	11254	Elizabeth Blackman	5.00
Sept. 13, 1913	11255	Warren E. Beebe	28.00
Sept. 13, 1913	11256	Mrs. Mary Berrier	8.50
Sept. 13, 1913	11257	J. M. Bechtel	14.50
Sept. 13, 1913	11258	Ida Bradshaw	3.50
Sept. 13, 1913	11259	F. C. Colby	14.00
Sept. 13, 1913	11260	Erve O. Cole	10.80

Date	No.	To Whom Issued	Amt.
Sept. 13, 1913	11261	Ida M. Chubb	27.25
Sept. 13, 1913	11262	J. E. Cornwell	31.85
Sept. 13, 1913	11263	Wib F. Clements	4.00
Sept. 13, 1913	11264	R. E. Clemons	8.84
Sept. 13, 1913	11265	L. M. Collins	.50
Sept. 13, 1913	11266	Frank Chalupeh	6.00
Sept. 13, 1913	11267	Dr. L. D. Carpenter	13.00
Sept. 13, 1913	11268	Mrs. Robt. Carlile	3.00
Sept. 13, 1913	11269	W. E. Cowan	7.00
Sept. 13, 1913	11270	Mrs. E. A. Crapsey	3.50
Sept. 13, 1913	11271	Marie Coppock	4.00
Sept. 13, 1913	11272	Marion Coppock	6.00
Sept. 13, 1913	11273	Mrs. L. H. Curran	64.50
Sept. 13, 1913	11274	June Collins	12.50
Sept. 13, 1913	11275	May Chamberlain	9.00
Sept. 13, 1913	11276	Mrs. W. O. Coffee	1.00
Sept. 13, 1913	11277	Mrs. M. A. Currough	3.00
Sept. 13, 1913	11278	Mrs. B. M. Comins	3.00
Sept. 13, 1913	11279	Clark Bros.	13.00
Sept. 13, 1913	11280	Miss M. Christson	3.00
Sept. 13, 1913	11281	J. E. Cundy	2.00
Sept. 13, 1913	11282	Velma Downing	22.00
Sept. 13, 1913	11283	Arthur Dearinger	8.00
Sept. 13, 1913	11284	M. J. Duncan	1.00
Sept. 13, 1913	11285	Joe F. Denberger	5.00
Sept. 13, 1913	11286	M. B. Denny	2.00
Sept. 13, 1913	11287	Helen A. Deets	59.00
Sept. 13, 1913	11288	Mrs. E. F. Davis	1.00
Sept. 13, 1913	11289	Wm. Danner	10.00
Sept. 13, 1913	11290	J. M. Dillow	5.00
Sept. 13, 1913	11291	Pearl Denny	9.00
Sept. 13, 1913	11292	Mrs. N. Deheck	1.00
Sept. 13, 1913	11293	B. Dunlap	2.00
Sept. 13, 1913	11294	Ardath Davis	.50
Sept. 13, 1913	11295	Mrs. John Davis	1.00
Sept. 13, 1913	11296	Harry Eddingfield	9.00
Sept. 13, 1913	11297	E. A. Elliott	15.00
Sept. 13, 1913	11298	S. H. Ellis	16.00
Sept. 13, 1913	11299	E. A. Edwards	6.00
Sept. 13, 1913	11300	Sophia J. Edmundson	1.00
Sept. 13, 1913	11301	Mrs. A. C. Eichenlaub	15.00
Sept. 13, 1913	11302	Theckla Eichenlaub	13.50
Sept. 13, 1913	11303	Minnie Eichenlaub	1.00
Sept. 13, 1913	11304	Mrs. J. C. Elliott	2.00
Sept. 13, 1913	11305	Martin Erickson	12.50
Sept. 13, 1913	11306	Miss Agnes Ellis	2.00
Sept. 13, 1913	11307	Josie Elder	2.00
Sept. 13, 1913	11308	Marjorie Ellis	5.00
Sept. 13, 1913	11309	R. F. Fantz	4.00
Sept. 13, 1913	11310	J. S. Fawcett & Son	4.00
Sept. 13, 1913	11311	Helen Finch	21.25
Sept. 13, 1913	11312	Farmers Co-operative Creamery Co	8.84
Sept. 13, 1913	11313	H. W. Falk	6.00
Sept. 13, 1913	11314	Alex Foggy	18.00
Sept. 13, 1913	11315	Fairholme Poultry Farm	10.00
Sept. 13, 1913	11316	Frank Fortman	1.50
Sept. 13, 1913	11317	P. A. Fosselman	4.00
Sept. 13, 1913	11318	S. L. Farlow	4.00
Sept. 13, 1913	11319	Mrs. T. J. Flora	58.00
Sept. 13, 1913	11320	Geo. B. Ferris	18.00
Sept. 13, 1913	11321	E. M. Frederickson	1.96

Date	No.	To Whom Issued	Amt.
Sept. 13, 1913	11322	Mrs. M. S. Friend	10.50
Sept. 13, 1913	11323	Mrs. G. B. Frost	41.00
Sept. 13, 1913	11324	Farmers Co-operative Creamery Co	5.89
Sept. 13, 1913	11325	H. L. Felter	55.50
Sept. 13, 1913	11326	J. W. Fager	3.00
Sept. 13, 1913	11327	Mrs. Edith Felter	7.00
Sept. 13, 1913	11328	Mrs. S. P. Fitzgerald	2.00
Sept. 13, 1913	11329	Mrs. Myrtle Fuson	5.00
Sept. 13, 1913	11330	John Finnegan	46.00
Sept. 13, 1913	11331	H. A. Griese	6.87
Sept. 13, 1913	11332	Chas. F. George	11.78
Sept. 13, 1913	11333	G. J. Gudknecht	1.96
Sept. 13, 1913	11334	Geo. Gude	1.96
Sept. 13, 1913	11335	D. B. Greubel	63.00
Sept. 13, 1913	11336	J. C. Gingery	5.00
Sept. 13, 1913	11337	A. E. Goodman	2.00
Sept. 13, 1913	11338	Mary J. Gaylor	13.50
Sept. 13, 1913	11339	Mrs. M. R. Good	1.00
Sept. 13, 1913	11340	Mrs. H. F. Gross	11.00
Sept. 13, 1913	11341	Nelle C. Greaney	13.50
Sept. 13, 1913	11342	O. M. Garrett	9.00
Sept. 13, 1913	11343	Mrs. Geo. M. Grinstead	27.00
Sept. 13, 1913	11344	Maizie Grinstead	42.00
Sept. 13, 1913	11345	Alna Grinstead	23.00
Sept. 13, 1913	11346	Theodore Grouna	20.00
Sept. 13, 1913	11347	Esther Green	5.00
Sept. 13, 1913	11348	Harry Groves	23.00
Sept. 13, 1913	11349	Clara Gates	2.00
Sept. 13, 1913	11350	Mrs. C. L. Gray	2.00
Sept. 13, 1913	11351	Mrs. Elizabeth Gilmore	4.00
Sept. 13, 1913	11352	Mrs. M. P. Gerard	2.00
Sept. 13, 1913	11353	Mrs. Jas. M. Grinstead, Jr	10.00
Sept. 13, 1913	11354	A. D. Hayes	9.00
Sept. 13, 1913	11355	F. P. Heffelfinger	1.00
Sept. 13, 1913	11356	Mrs. W. H. Harwood	36.50
Sept. 13, 1913	11357	Carl Haviland	5.89
Sept. 13, 1913	11358	W. A. Hook	17.00
Sept. 13, 1913	11359	W. P. Hughes	4.91
Sept. 13, 1913	11360	Lenis Haggland	2.00
Sept. 13, 1913	11361	F. H. Harmes	10.80
Sept. 13, 1913	11362	Henry Hanson	6.87
Sept. 13, 1913	11363	Jas. Hethershaw	177.00
Sept. 13, 1913	11364	J. F. Harsh	15.00
Sept. 13, 1913	11365	M. J. Harris	22.00
Sept. 13, 1913	11366	W. Harvey	20.00
Sept. 13, 1913	11367	Katherine Hegna	2.00
Sept. 13, 1913	11368	Wm. Helgason	8.84
Sept. 13, 1913	11369	Hanson's Poultry Farm	39.50
Sept. 13, 1913	11370	C. W. Howell	1.00
Sept. 13, 1913	11371	Frank Harris	2.00
Sept. 13, 1913	11372	Mrs. Frank Harris	1.50
Sept. 13, 1913	11373	Weir Hart	28.00
Sept. 13, 1913	11374	T. H. Hall	3.00
Sept. 13, 1913	11375	Chas. E. Hines	1.00
Sept. 13, 1913	11376	C. E. Hiatt	12.00
Sept. 13, 1913	11377	Harry Hilton	2.00
Sept. 13, 1913	11378	R. M. Howard	2.00
Sept. 13, 1913	11379	W. C. Hengen	13.00
Sept. 13, 1913	11380	I. E. Hubler & Sons	18.00
Sept. 13, 1913	11381	E. Heydon	31.00
Sept. 13, 1913	11382	C. W. Reeder	9.50
Sept. 13, 1913	11383	S. O. Rusley	9.81

Date	No.	To Whom Issued	Amt.
Sept. 13, 1913	11384	W. A. Rizer	5.89
Sept. 13, 1913	11385	John Paulson Ring	4.91
Sept. 13, 1913	11386	J. D. Reid	9.00
Sept. 13, 1913	11387	R. B. Rowe	26.00
Sept. 13, 1913	11388	F. L. Reinhard & Son	56.50
Sept. 13, 1913	11389	J. F. Robinson	3.00
Sept. 13, 1913	11390	Georgia Ruffcorn	16.00
Sept. 13, 1913	11391	Beatrice Richey	33.50
Sept. 13, 1913	11392	Mrs. Homer Ross	3.00
Sept. 13, 1913	11393	Oscar Rustad	6.00
Sept. 13, 1913	11394	Chester Reeves	26.50
Sept. 13, 1913	11395	Ray Redfern	10.00
Sept. 13, 1913	11396	Mrs. M. A. Rood	4.50
Sept. 13, 1913	11397	Mrs. Mary Ross	47.00
Sept. 13, 1913	11398	Anna Redhead	23.00
Sept. 13, 1913	11399	Augusta Reese	1.00
Sept. 13, 1913	11400	Chas. & V. A. Summers	2.00
Sept. 13, 1913	11401	Mrs. A. Stirling	8.95
Sept. 13, 1913	11402	Arthur Spear	3.00
Sept. 13, 1913	11403	S. A. Shetterley	174.91
Sept. 13, 1913	11404	H. C. Stendel	179.81
Sept. 13, 1913	11405	Myrta Steers	16.00
Sept. 13, 1913	11406	Thos. E. Sadler	12.76
Sept. 13, 1913	11407	C. G. Seiberling	10.00
Sept. 13, 1913	11408	Sam Savereid	7.86
Sept. 13, 1913	11409	R. D. Sweet	5.89
Sept. 13, 1913	11410	A. W. Snyder	4.91
Sept. 13, 1913	11411	Watson Shick	3.93
Sept. 13, 1913	11412	V. F. Schultz	1.96
Sept. 13, 1913	11413	Roy Scholes	8.84
Sept. 13, 1913	11414	H. Soballe	14.23
Sept. 13, 1913	11415	Mrs. J. W. Seevers	2.00
Sept. 13, 1913	11416	Iowana Farms	22.00
Sept. 13, 1913	11417	A. A. Simons	27.50
Sept. 13, 1913	11418	Anton Smith	10.80
Sept. 13, 1914	11419	O. B. Sterling	3.93
Sept. 13, 1913	11420	State Center Farmers Co-op. Cry. Co	5.89
Sept. 13, 1913	11421	W. Shetterly	8.00
Sept. 13, 1913	11422	Frank Szerlong	7.86
Sept. 13, 1913	11423	Phillip Souers	6.00
Sept. 13, 1913	11424	J. C. Sandmeir	5.00
Sept. 13, 1913	11425	Sestier Bros.	90.00
Sept. 13, 1913	11426	Mrs. F. C. Sheldon	7.00
Sept. 13, 1913	11427	Julius Sinn	14.00
Sept. 13, 1913	11428	Howard Shane	3.00
Sept. 13, 1913	11429	L. J. Schuster	21.00
Sept. 13, 1913	11430	Mrs. Louise M. Smith	13.00
Sept. 13, 1913	11431	Mrs. C. O. Seaman	1.00
Sept. 13, 1913	11432	Selvis H. Stamm	4.00
Sept. 13, 1913	11433	B. D. Smith	19.50
Sept. 13, 1913	11434	Florence H. Stevens	2.00
Sept. 13, 1913	11435	Armenia Sampey	45.00
Sept. 13, 1913	11436	Mabel Shepard	3.00
Sept. 13, 1913	11437	J. F. Seiberling	3.00
Sept. 13, 1913	11438	Mrs. S. Stutsman	9.00
Sept. 13, 1913	11439	Mrs. C. S. Smith	11.00
Sept. 13, 1913	11440	G. Stuessi	10.80
Sept. 13, 1913	11441	Caroline Steindler	35.00
Sept. 13, 1913	11442	Hazel Snyder	16.50
Sept. 13, 1913	11443	Mrs. Mary A. Soules	2.00
Sept. 13, 1913	11444	Miss Eunice Stuart	1.00
Sept. 13, 1913	11445	Edith Smith	5.00

Date	No.	To Whom Issued	Amt.
Sept. 13, 1913	11446	Mrs. E. C. Sturman	1.50
Sept. 13, 1913	11447	Mrs. O. R. Sheets	3.00
Sept. 13, 1913	11448	S. I. Stocker	2.00
Sept. 13, 1913	11449	Mrs. C. N. Smith	7.00
Sept. 13, 1913	11450	Mrs. Elinor Selleck	4.00
Sept. 13, 1913	11451	Louise Sprague	8.00
Sept. 13, 1913	11452	L. C. Shivvers	30.00
Sept. 13, 1913	11453	Alice Seymour	79.50
Sept. 13, 1913	11454	Helen Secor	1.50
Sept. 13, 1913	11455	Johanna Schiewe	4.00
Sept. 13, 1913	11456	Dr. C. O. Seaman	1.00
Sept. 13, 1913	11457	Rudolph Schmidt	6.00
Sept. 13, 1913	11458	J. H. Sprague	21.50
Sept. 13, 1913	11459	Mrs. Sarah Smithson	4.00
Sept. 13, 1913	11460	Mrs. F. D. Shivers	8.95
Sept. 13, 1913	11461	W. A. Taylor & Sons	3.00
Sept. 13, 1913	11462	C. H. True	106.00
Sept. 13, 1913	11463	Trio Poultry Farm	14.00
Sept. 13, 1913	11464	Taylor Bros.	11.00
Sept. 13, 1913	11465	Miss Lillian M. Thornton	23.00
Sept. 13, 1913	11466	E. R. Trites	31.00
Sept. 13, 1913	11467	J. L. Trites	17.00
Sept. 13, 1913	11468	Mrs. E. L. Thompson	15.00
Sept. 13, 1913	11469	Miss R. Thompson	20.50
Sept. 13, 1913	11470	Lillie Taylor	4.00
Sept. 13, 1913	11471	J. L. Todd	90.50
Sept. 13, 1913	11472	Margaret E. Tomlinson	10.00
Sept. 13, 1913	11473	E. Dorothea Tomlinson	12.00
Sept. 13, 1913	11474	M. J. Thomas	9.50
Sept. 13, 1913	11475	Ida A. Towne	3.00
Sept. 13, 1913	11476	Ella M. Trowbridge	23.00
Sept. 13, 1913	11477	Lettie M. Thornton	23.00
Sept. 13, 1913	11478	Mrs. E. W. Toland	1.00
Sept. 13, 1913	11479	W. Trillow	216.00
Sept. 13, 1913	11480	Minta Tenney	16.00
Sept. 13, 1913	11481	Mack Utterback	45.00
Sept. 13, 1913	11482	Wix Utterback	12.00
Sept. 13, 1913	11483	W. E. Utterback	150.55
Sept. 13, 1913	11484	C. and C. T. Van Lint	6.00
Sept. 13, 1913	11485	J. F. Vandermeir	1.96
Sept. 13, 1913	11486	Edith Vensil	11.00
Sept. 13, 1913	11487	Helga Vald	2.00
Sept. 13, 1913	11488	F. F. and V. G. Warner	62.00
Sept. 13, 1913	11489	F. D. Warner	8.84
Sept. 13, 1913	11490	J. S. Wilson Floral Co.	382.00
Sept. 13, 1913	11491	J. M. Williamson	24.00
Sept. 13, 1913	11492	Edna A. Wheeler	19.00
Sept. 13, 1913	11493	Wm. Winneke	30.00
Sept. 13, 1913	11494	Mrs. Lydia Welsh	22.00
Sept. 13, 1913	11495	Wm. Walker	1.00
Sept. 13, 1913	11496	Mrs. A. M. Walrath	7.00
Sept. 13, 1913	11497	Mrs. J. N. Walker	3.00
Sept. 13, 1913	11498	Logan Earl Wing	10.00
Sept. 13, 1913	11499	W. F. Wallace	1.00
Sept. 13, 1913	11500	J. S. Wright	15.00
Sept. 13, 1913	11501	R. E. West	113.50
Sept. 13, 1913	11502	Zoe Williams	2.00
Sept. 13, 1913	11503	Mrs. Bertha Walter	.50
Sept. 13, 1913	11504	Mrs. Leander Williams	3.00
Sept. 13, 1913	11505	Miss Minnie West	5.50
Sept. 13, 1913	11506	Kenneth West	4.00
Sept. 13, 1913	11507	T. E. Ward	2.00

Date	No.	To Whom Issued	Amt.
Sept. 13, 1913	11508	Geo. S. Woodruff	18.00
Sept. 13, 1913	11509	J. F. Warner	6.00
Sept. 13, 1913	11510	Robt. Wagner	9.81
Sept. 13, 1913	11511	Mrs. W. D. Woods	4.00
Sept. 13, 1913	11512	Mrs. S. G. Weaver	2.00
Sept. 13, 1913	11513	Gertrude B. Wilkinson	2.00
Sept. 13, 1913	11514	H. H. Whiting	3.92
Sept. 13, 1913	11515	Mrs. M. J. Whaite	4.00
Sept. 13, 1913	11516	W. J. Weisbrod	6.00
Sept. 13, 1913	11517	Mrs. Mary Walz	8.00
Sept. 13, 1913	11518	Sarah A. Watkins	3.00
Sept. 13, 1913	11519	M. J. Worth	115.50
Sept. 13, 1913	11520	L. L. Zbornik	5.89
Sept. 13, 1913	11521	F. M. Zell	4.91
Sept. 13, 1913	11522	Bessie Zacharia	8.50
Sept. 13, 1913	11523	Willard Zeller	44.00
Sept. 13, 1913	11524	O. A. Decker	18.05
Sept. 13, 1913	11525	W. W. Gwinn	32.55
Sept. 13, 1913	11526	Chas. O. Garrett	258.90
Sept. 13, 1913	11527	Geo. M. Grinstead	68.90
Sept. 13, 1913	11528	Mrs. J. C. Hol	25.45
Sept. 13, 1913	11529	Cyrus E. Harvey	28.50
Sept. 13, 1913	11530	C. E. Malone	201.23
Sept. 13, 1913	11531	Mrs. B. A. Mathews	73.35
Sept. 13, 1913	11532	C. E. Mincer	163.60
Sept. 13, 1913	11533	B. Stuart	101.95
Sept. 13, 1913	11534	J. F. Wellons	66.40
Sept. 13, 1913	11535	M. J. Wragg	23.20
Sept. 13, 1913	11536	E. O. Worth	109.85
Sept. 13, 1913	10607	M. E. Hinckley	1.50
Sept. 13, 1913	10608	Mrs. G. B. Hippee	85.00
Sept. 13, 1913	10609	Ellsworth Harker	22.00
Sept. 13, 1913	10610	Frank Harker	26.00
Sept. 13, 1913	10611	Frank Hood	7.00
Sept. 13, 1913	10612	Carl Holden	84.00
Sept. 13, 1913	10613	F. C. Hinze	9.81
Sept. 13, 1913	10614	W. F. Harms	2.94
Sept. 13, 1913	10615	Mrs. S. H. Hazard	13.00
Sept. 13, 1913	10616	Mrs. Bertha Hoover	10.00
Sept. 13, 1913	10617	Mrs. Robert Horne	3.00
Sept. 13, 1913	10618	Henry George	23.00
Sept. 13, 1913	10619	H. V. Hethershaw	8.00
Sept. 13, 1913	10620	Mrs. Cyrus E. Harvey	6.50
Sept. 13, 1913	10621	Ada Harvey	4.00
Sept. 13, 1913	10622	Mary Hoepner	2.00
Sept. 13, 1913	10623	Mrs. Jacob Harpel	2.50
Sept. 13, 1913	10624	Mrs. Charles Howard	1.00
Sept. 13, 1913	10625	Mrs. E. H. Hanks	2.00
Sept. 13, 1913	10626	Evelyn Hawks	6.00
Sept. 13, 1913	10627	Mrs. K. Hegna	3.00
Sept. 13, 1913	10628	Mrs. J. W. Hurd	1.00
Sept. 13, 1913	10629	F. O. Harrington	64.50
Sept. 13, 1913	10630	Iowa Seed Company	398.00
Sept. 13, 1913	10631	Mary J. Iseman	2.00
Sept. 13, 1913	10632	A. B. Jordan	1.00
Sept. 13, 1913	10633	Carl Jorgensen	5.89
Sept. 13, 1913	10634	E. A. Jensen	6.87
Sept. 13, 1913	10635	H. H. Jensen	10.80
Seut. 13, 1913	10636	M. P. Junker	9.81
Sept. 13, 1913	10637	R. S. Jackson	15.00
Sept. 13, 1913	10638	Frank Johnson	14.00
Sept. 13, 1913	10639	James Jensen	23.00

Date	No.	To Whom Issued	Amt.
Sept. 13, 1913	10640	John Justice	136.95
Sept. 13, 1913	10641	Niels P. Jorgensen	6.87
Sept. 13, 1913	10642	R. Jorgensen	6.87
Sept. 13, 1913	10643	Chris B. Jensen	5.89
Sept. 13, 1913	10644	M. S. Jones	16.50
Sept. 13, 1913	10645	Frank Justice	2.00
Sept. 13, 1913	10646	Isaac Johnston	182.00
Sept. 13, 1913	10647	Mrs. C. H. Johnston	1.00
Sept. 13, 1913	10648	Joe Kramer	40.00
Sept. 13, 1913	10649	John M. Kott	5.00
Sept. 13, 1913	10650	C. T. Knutson	4.91
Sept. 13, 1913	10651	Kriger Bros.	28.00
Sept. 13, 1913	10652	Carl Koenigsberger	7.00
Sept. 13, 1913	10653	Francis Keffer	57.50
Sept. 13, 1913	10654	Mrs. M. Kastberg	52.50
Sept. 13, 1913	10655	Mrs. Clara Kaup	3.50
Sept. 13, 1913	10656	H. E. Killmer	9.00
Sept. 13, 1913	10657	Kellogg & Kellogg	4.00
Sept. 13, 1913	10658	Fanny M. Klinck	217.72
Sept. 13, 1913	10659	Ella Koch	34.00
Sept. 13, 1913	10660	F. H. Kelling	9.81
Sept. 13, 1913	10661	Mary Kegley	3.00
Sept. 13, 1913	10662	W. O. Knapp	38.00
Sept. 13, 1913	10663	Mrs. Charlotte Kinney	2.00
Sept. 13, 1913	10664	Henry Langstrat	66.00
Sept. 13, 1913	10665	H. C. Ladage	6.87
Sept. 13, 1913	10666	Chris Lundhay	4.91
Sept. 13, 1913	10667	L. H. Larson	6.87
Sept. 13, 1913	10668	E. E. Lucas	30.00
Sept. 13, 1913	10669	Fred Lehman	2.94
Sept. 13, 1913	10670	R. A. Lundberg	5.00
Sept. 13, 1913	10671	Wm. J. Lockhart	19.00
Sept. 13, 1913	10672	Martha Leuty	14.00
Sept. 13, 1913	10673	Jennie Leuty	7.00
Sept. 13, 1913	10674	R. H. Longworth	135.00
Sept. 13, 1913	10675	Harral A. Longworth	108.00
Sept. 13, 1913	10676	Mrs. R. H. Longworth	8.00
Sept. 13, 1913	10677	Mary J. Latta	50.00
Sept. 13, 1913	10678	Sarah J. Latta	16.00
Sept. 13, 1913	10679	W. F. Lyon	133.55
Sept. 13, 1913	10680	O. O. Lomen	46.00
Sept. 13, 1913	10681	Mrs. O. O. Lomen	51.73
Sept. 13, 1913	10682	G. F. Langquist	5.89
Sept. 13, 1913	10683	N. M. Leonard	22.00
Sept. 13, 1913	10684	Mrs. Frances Lingenfelter	11.00
Sept. 13, 1913	10685	Minnie B. Lewis	12.00
Sept. 13, 1913	10686	Lozier, The Florist	6.00
Sept. 13, 1913	10687	Mrs. R. A. Lewis	71.00
Sept. 13, 1913	10688	J. F. Larenson	4.91
Sept. 13, 1913	10689	J. A. Mason	17.00
Sept. 13, 1913	10690	Wm. Matters	7.86
Sept. 13, 1913	10691	Harriet Macey	96.50
Sept. 13, 1913	10692	L. H. Manley	4.00
Sept. 13, 1913	10693	Thos. L. Morlan	5.00
Sept. 13, 1913	10694	W. E. Mittelstadt	8.84
Sept. 13, 1913	10695	Mrs. L. G. Miller	18.50
Sept. 13, 1913	10696	Carl Meier	7.86
Sept. 13, 1913	10697	Mrs. E. F. Morris	7.00
Sept. 13, 1913	10698	E. E. Mittelstadt	12.27
Sept. 13, 1913	10699	Dr. R. B. Munn	12.00
Sept. 13, 1913	10700	J. C. Mawdsley	22.00
Sept. 13, 1913	10701	E. R. Mawdsley	23.00

Date	No.	To Whom Issued	Amt.
Sept. 13, 1913	10702	Chris Horck	11.78
Sept. 13, 1913	10703	Mr. and Mrs. A. L. Moore	8.00
Sept. 13, 1913	10704	Ernest Massey	5.00
Sept. 13, 1913	10705	Clarence Meyer	15.00
Sept. 13, 1913	10706	Mrs. Richard Manning	33.00
Sept. 13, 1913	10707	Maplehurst Gardens	63.00
Sept. 13, 1913	10708	George Madison	5.00
Sept. 13, 1913	10709	H. R. Malone	200.70
Sept. 13, 1913	10710	Lucy V. Morrison	3.00
Sept. 13, 1913	10711	A. L. Merriam	3.00
Sept. 13, 1913	10712	Anne M. Meyer	22.50
Sept. 13, 1913	10713	Mabel Miller	21.50
Sept. 13, 1913	10714	Fern B. Miller	12.00
Sept. 13, 1913	10715	Mrs. J. S. Murrow	4.00
Sept. 13, 1913	10716	Forest B. Meyers	2.00
Sept. 13, 1913	10717	Catherine N. McCartney	65.50
Sept. 13, 1913	10718	Fritz D. Mathis	3.00
Sept. 13, 1913	10719	G. O. Miller	10.80
Sept. 13, 1913	10720	D. W. Mohler	7.86
Sept. 13, 1913	10721	Mrs. A. S. Marquis	2.00
Sept. 13, 1913	10722	Mrs. M. J. Mansager	3.93
Sept. 13, 1913	10723	Fred McCulloch	140.17
Sept. 13, 1913	10724	Ed B. McPherrin	2.00
Sept. 13, 1913	10725	Wm. McMichael	2.00
Sept. 13, 1913	10726	Dora McLain	10.00
Sept. 13, 1913	10727	Geo. T. McCannon	42.00
Sept. 13, 1913	10728	Flora A. McLennan	2.00
Sept. 13, 1913	10729	H. J. McCullom	34.00
Sept. 13, 1913	10730	F. E. McCall	34.00
Sept. 13, 1913	10731	Beulah McAdoo	1.00
Sept. 13, 1913	10732	Cecil McMahin	14.00
Sept. 13, 1913	10733	C. R. McClean	1.00
Sept. 13, 1913	10734	Ada B. Newquist	24.50
Sept. 13, 1913	10735	G. Nesland	8.00
Sept. 13, 1913	10736	Miller S. Nelson	183.79
Sept. 13, 1913	10737	Mrs. L. M. Nelson	1.00
Sept. 13, 1913	10738	O. Osborne	12.00
Sept. 13, 1913	10739	E. B. Olds	8.84
Sept. 13, 1913	10740	Mrs. Lafe Owens	3.50
Sept. 13, 1913	10741	N. Overgaard	6.87
Sept. 13, 1913	10742	O'Donnell Poultry Farm	1.50
Sept. 13, 1913	10743	W. F. Otcheck	205.54
Sept. 13, 1913	10744	Mrs. H. E. Olson	3.50
Sept. 13, 1913	10745	P. M. Parsons	6.00
Sept. 13, 1913	10746	P. W. Peterson	7.86
Sept. 13, 1913	10747	Mrs. J. A. Peters	20.22
Sept. 13, 1913	10748	F. G. Paul	5.00
Sept. 13, 1913	10749	Mary E. Peck	16.00
Sept. 13, 1913	10750	A. L. Plummer	91.75
Sept. 13, 1913	10751	Luther R. Pike	2.00
Sept. 13, 1913	10752	Walter H. Plows	143.43
Sept. 13, 1913	10753	K. L. Price	13.00
Sept. 13, 1913	10754	Elliott Purmort	3.00
Sept. 13, 1913	10755	E. L. Pearson	36.00
Sept. 13, 1913	10756	J. V. Pfander & Son	7.00
Sept. 13, 1913	10757	P. W. Pitt	5.00
Sept. 13, 1913	10758	Edna M. Patzig	27.00
Sept. 13, 1913	10759	Emanuel Peterson	9.00
Sept. 13, 1913	10760	Beryl Parks	13.00
Sept. 13, 1913	10761	John Peterson	12.00
Sept. 13, 1913	10762	J. J. Proudfit	68.00
Sept. 13, 1913	10763	Mrs. W. O. Plummer	16.50

Date	No.	To Whom Issued	Amt.
Sept. 13, 1913	10764	Vesta Plummer	20.00
Sept. 13, 1913	10765	Hazel Plummer	14.00
Sept. 13, 1913	10766	Mrs. Anna Parr	3.00
Sept. 13, 1913	10767	Tillie M. Peterson	27.00
Sept. 13, 1913	10768	Neota A. Plummer	2.00
Sept. 13, 1913	10769	W. A. Pickering	.50
Sept. 13, 1913	10770	Mrs. Milt Person	3.00
Sept. 13, 1913	10771	J. E. Proudfit	9.00
Sept. 13, 1913	10772	C. A. Patterson	8.00
Sept. 13, 1913	10773	Twila Potter	2.00
Sept. 13, 1913	10774	Mrs. E. H. Pickering	24.00
Sept. 13, 1913	10775	P. M. Peterson	27.00
Sept. 13, 1913	10776	Chas. M. Pink	43.00
Sept. 13, 1913	10777	Mrs. Berl Parks	2.00
Sept. 13, 1913	10778	R. Harrold Reed	15.00
Sept. 13, 1913	10779	Elmer Reed	60.00
Sept. 13, 1913	10780	Mrs. John A. Ryan	62.00
Sept. 13, 1913	10781	Henry Rollinson	136.00
Sept. 19, 1913	11537	Hazel Betts	2.00
Sept. 19, 1913	11538	Dr. M. W. Downing and Bro.	7.00
Sept. 20, 1913	11539	Stock Yards Harness and Saddle Co.	100.00
Sept. 23, 1913	11540	Helen A. Deets	1.00
Sept. 24, 1913	11541	Bessie Hart, Co. Supt.	4.00
Sept. 24, 1913	11542	Kate R. Logan	28.00
Sept. 24, 1913	11543	Carolyn E. Forgrave, Co. Supt.	85.00
Sept. 24, 1913	11544	June Chidester	81.00
Sept. 24, 1913	11545	Zina Fessenden	3.00
Sept. 24, 1913	11546	Myrtle A. Dungan	15.00
Sept. 24, 1913	11547	Clara L. Cowgill	40.00
Sept. 24, 1913	11548	Carrie E. Ludlow	18.00
Sept. 24, 1913	11549	Sarah Huftalen	80.00
Sept. 24, 1913	11550	Pearl De Jarnette	74.00
Sept. 24, 1913	11551	Z. C. Thornburg	123.00
Sept. 24, 1913	11552	Maude Wakefield	52.00
Sept. 24, 1913	11553	Jno. R. Slacks	18.00
Sept. 24, 1913	11554	Minnie Connor	15.00
Sept. 24, 1913	11555	L. C. Brown	29.00
Sept. 27, 1913	11556	Sarah A. Watkins	3.00
Sept. 27, 1913	11557	Leo Ahart	50.00
Oct. 4, 1913	11558	Iowa State College	600.00
Oct. 14, 1913	11559	Cyrus E. Harvey	3.00
Nov. 19, 1913	11560	W. C. Estes	15.00
Nov. 19, 1913	11561	Chas. Irvine	35.00
Total			$61,069.90

EXPENSE WARRANTS ISSUED DURING THE PERIOD FROM DECEMBER 1st, 1912, to NOVEMBER 30th, 1913.

Note.—The expense warrants issued in the name of A. R. Corey, Secretary Grounds Department, are deposited with the Iowa Trust and Savings Bank to the credit of the grounds department payroll account. Payroll checks are then issued by the secretary against this account so that the department may have a receipted voucher for the payment of all claims for labor in the grounds department.

This same method is employed in paying off all help under the department superintendents at the close of the fair. After the payroll of each superintendent is approved by the board the secretary is instructed to issue an expense warrant covering the amount of each payroll and deposit the same in the bank to the credit of the superintendent's pay roll account. The superintendent then issues checks against this account in payment of help employed.

Date	No.	To Whom Issued	Amt.
12-13	10092	R. S. Johnston, expenses attending meetings, American Assn. Fairs and Expositions, Chicago..$	18.65
12-13	10093	O. A. Olson, expenses attending meetings, American Assn. Fairs and Expositions, Chicago......	43.52
12-13	10094	H. L. Pike, expenses attending meetings, American Assn. Fairs and Expositions, Chicago......	32.80
12-13	10095	E. M. Wentworth, expenses attending meeting American Assn. Fairs and Expositions, Chicago..	17.25
12-13	10096	E. J. Curtin, expenses attending meeting American Assn. Fairs and Expositions, Chicago......	35.60
12-13	10097	J. F. Summers, expenses attending meeting American Assn. Fairs and Expositions, Chicago......	33.60
12-13	10098	C. E. Cameron, expenses attending meeting American Assn. Fairs and Exposition, Chicago......	32.91
12-13	10099	C. E. Cameron, per diem and mileage annual meeting	38.00
12-13	10100	O. A. Olson, per diem and mileage annual meeting....	39.50
12-13	10101	R. S. Johnston, per diem and mileage annual meeting	39.80
12-13	10102	C. W. Phillips, per diem and mileage annual meeting	45.00
12-13	10103	E. M. Reeves, per diem and mileage annual meeting	36.30
12-13	10104	E. J. Curtin, per diem and mileage annual meeting	39.50
12-13	10105	E. M. Wentworth, per diem and mileage annual meeting	30.00
12-13	10106	T. C. Legoe, per diem and mileage annual meeting	28.50
12-13	10107	C. F. Curtiss, per diem and mileage annual meeting	23.70
12-13	10108	F. E. Sheldon, per diem and mileage annual meeting	36.30
12-13	10109	J. F. Summers, per diem and mileage annual meeting	40.00
12-13	10110	Jno. P. Mullen, per diem and mileage annual meeting	35.70
12-13	10111	H. L. Pike, per diem and mileage annual meeting	44.00
12-16	10112	Audubon County Journal, expense advertising 1912 fair	5.28

Date	No.	To Whom Issued		Amt.
12-16	10113	American Surety Co., premium secretary's bond 1913		25.00
12-16	10114	A. V. Storm, expenses superintendent school exhibits 1912 fair		25.08
12-16	10115	Anna V. Day, expenses judge school exhibits department 1912 fair		18.75
12-18	10116	J. E. Lovejoy, payment on contract for horse barn built 1912		2,000.00
12-18	10117	J. H. Queal & Co., balance lumber bill, 1912		539.31
12-18	10118	Jno. T. Christie & Co., insurance on buildings		150.00
12-18	10119	A. R. Corey, expense special committee work, account Greater Des Moines Committee		4.00
12-18	10120	A. R. Corey, expenses attending meeting of American Assn. of Fairs and Expositions, Chicago		38.10
12-18	10121	Alta Dickens, premium on account 1912 fair		2.00
12-20	10122	American Laundry, laundry bills, dining hall 1912 fair		2.99
12-21	10123	A. R. Corey, Secretary, pay roll No. 1 (grounds) November 18, December 14, inclusive:		
		A. H. Weihn, labor on race track, 11 days @ $2.00	$ 22.00	
		A. H. Weihn, labor on race track, 12 days @ $2.00	24.00	
		M. Burnett, labor on race track, 4 days @ $2.00	8.00	
		S. B. Brown, labor on race track, ½ day @ $4.00	2.00	56.00
12-30	10124	Frank E. McColl, expense accounts box apple exhibit, 1912 fair		6.75
12-31	10125	C. A. Nash, salary December, 1912		125.00
12-31	10126	Elsie Colton, salary December, 1912		100.00
12-31	10127	J. H. Deemer, salary December, 1912		100.00
12-31	10128	Edith K. Smith, additional salary, December, 1912		10.00
12-31	10129	Minnie Anderson, salary extra clerk, December, 1912		65.00
12-31	10130	A. R. Corey, Secretary, pay roll No. 2 (grounds) December 16-28 inclusive:		
		A. H. Weihn, labor on grounds, 10½ days @ $2.00	$ 21.00	
		M. Burnett, labor on grounds, 11 days @ $2.00	22.00	43.00
1- 3	10131	Mrs. F. S. Watts, expense account speaker annual meeting		5.80
1- 3	10132	American Assn. Farmers' Institutes, dues 1912		5.00
1- 7	10133	A. R. Corey, secretary, pay roll No. 3 (grounds), December 23-January 4, inclusive:		
		Dan Daughenbaugh, hauling cinders, 29 loads @ 90c	$ 26.10	
		Dan Daughenbaugh, labor on grounds, 3 days @ $4.00	12.00	
		Leo Paul, hauling cinders, 20 loads @ 90c	18.00	
		Leo Paul, labor on grounds, 3 days @ $4.00	12.00	68.10
1- 8	10134	W. H. Brereton, 6,600 brick		49.50
1-11	10135	C. E. Cameron, per diem and mileage Executive Committee Meeting		26.00
1-11	10136	O. A. Olson, per diem and mileage Executive Committee Meeting		27.50
1-11	10137	C. E. Cameron, expense attending meeting, American Trotting Assn., Chicago		30.46

Date	No.	To Whom Issued	Amt.
1-11	10138	C. F. Curtiss, special committee work, Publicity Department	7.70
1-13	10139	Mary T. Watts, expense account Babies' Health Contest, 1912 fair	4.35
1-15	10140	Iowa Assn. County and District Fairs, annual dues and prorata expense annual meeting	15.25
1-17	10141	O. A. Olson, per diem and mileage Executive Committee meeting	31.50
1-17	10142	C. E. Cameron, per diem and mileage Executive Committee meeting	30.00
1-17	10143	Jno. F. Summers, special committee work on plan for proposed sheep barn	28.00
1-17	10144	H. L. Pike, special committee work on plans for proposed cattle barn	32.00
1-17	10145	C. F. Curtiss, special meeting publicity department	11.70
1-18	10146	Jno. Potts, hauling 56 loads cinders @ 90c	50.40
1-18	10147	L. S. Casner, 52 bushels of corn, mule and horse teams, grounds	19.24
1-18	10148	A. R. Corey, Secretary, pay roll No. 4 (grounds) A. H. Weihn, hauling cinders, 7 days @ $2.00 . $ 14.00 A. H. Weihn, shoveling snow, 5 days @ $2.00 . 10.00 Dan Daughenbaugh, hauling cinders, 22 loads @ 90c . 19.80 Dan Daughenbaugh, hauling cinders, 5 loads @ 45c . 2.25 M. Burnett, labor on grounds, 9 days @ $2.00 . 18.00	64.05
1-28	10149	E. M. Wentworth, correction on error in deposit by Public Safety Department, 1912 fair	10.35
1-29	10150	C. E. Cameron, per diem and mileage Executive Committee Meeting	26.00
1-29	10151	O. A. Olson, per diem and mileage Executive Committee Meeting	27.50
1-31	10152	C. A. Nash, salary, January, 1913	125.00
1-31	10153	Elsie Colton, salary, January, 1913	100.00
1-31	10154	J. H. Deemer, salary, January, 1913	100.00
1-31	10155	Edith K. Smith, additional salary, January, 1913	10.00
1-31	10156	Minnie Anderson, salary extra clerk, January, 1913	65.00
1-31	10157	Martha Coffin, extra clerk, 14 days, January, 1913	35.00
2- 1	10158	A. R. Corey, Secretary, pay roll No. 5 (grounds); A. H. Weihn, hauling cinders, 18 days @ $2.00 $36.00	36.00
2- 3	10159	R. G. Patton, settlement of claim on account of cabbage privilege, 1912 fair	20.00
2- 3	10160	Billboard Pub. Co., subscription February 4, 1912, to February 4, 1913	4.00
2- 3	10161	R. L. Polk & Co., 1912 city directory	7.00
2- 7	10162	C. E. Cameron, per diem and mileage, Executive Committee meeting	30.00
2- 7	10163	O. A. Olson, per diem and mileage, Executive Committee meeting	31.50
2- 7	10164	J. P. Mullen, per diem and mileage legislative committee meeting	27.70
2- 8	10165	Iowa Telephone Co., toll charges Ames station	.30
2-10	10166	J. M. Stewart, balance grading contract, speed barns, [illegible]	27.82
2-10	10167	Koch Bros., 180 premium ribbons, French Draft Exhibits, Horse Department, 1912 fair	4.00
2-10	10168	J. F. [illegible], sheriff Polk county, fees for certified copy and condemnation proceedings	15.10

Date	No.	To Whom Issued	Amt.
2-10	10169	Chas. A. Guth, recorder Polk county, recording fees land condemnation proceedings	15.85
2-13	10170	Louis Kurtz, postmaster, postage	80.00
2-18	10171	F. W. Beckman, expense account speaker annual meeting	1.90
2-21	10172	C. E. Cameron, per diem and mileage, Executive Committee meeting	26.00
2-21	10173	O. A. Olson, per diem and mileage, Executive Committee meeting	27.50
2-21	10174	J. F. Summers, committee work privilege department	28.00
2-22	10175	O. A. Olson, expense attending attraction meeting, Chicago	28.70
2-22	10176	C. E. Cameron, expense attending attraction meeting, Chicago	31.73
2-24	10177	A. R. Corey, expense attending attraction meeting, Chicago	24.75
2-28	10178	H. N. Whitney, salary, February, 1913	166.66
2-28	10179	C. A. Nash, salary, February, 1913	125.00
2-28	10180	Elsie Colton, salary, February, 1913	100.00
2-28	10181	J. H. Deemer, salary, February, 1913	100.00
2-28	10182	Edith K. Smith, additional salary, February, 1913	10.00
2-28	10183	Minnie Anderson, salary extra clerk, February, 1913	65.00
2-28	10184	Emma Daniels, salary extra clerk, 5 days, February, 1913	12.50
2-28	10185	Martha Coffin, salary extra clerk, 2 days, February, 1913	5.00
2-28	10186	H. N. Whitney, expense attending Iowa Assn. of Ad Club, Waterloo	6.99
2-28	10187	Louis Kurtz, postmaster, postage 2,200 Greater Iowa	22.00
3- 1	10188	A. H. Weihn, cinder hauling, grounds, 23½ days @ $2.00	47.00
3- 1	10189	L. H. Kurtz, postmaster, postage 2,600 Greater Iowa	26.00
3- 3	10190	J. F. Summers, expense attending attraction meeting, Chicago	26.80
3- 4	10191	E. J. Curtin, expense attending attraction meeting, Chicago	32.80
3- 4	10192	E. J. Curtin, expense attending meeting American Trotting Assn., Chicago	24.10
3- 7	10193	O. A. Olson, per diem and mileage, Executive Committee meeting	31.50
3- 7	10194	J. P. Mullen, per diem and mileage, legislative committee meeting	23.70
3- 8	10195	C. E. Cameron, per diem and mileage, Executive Committee meeting	34.00
3- 8	10196	L. H. Kurtz, postmaster, postage	40.00
3-11	10197	Adams Express Co., express bills, October, 1913-January, 1913	1.80
3-11	10198	American Express Co., express bills, October and December, 1912, January and February. 1913	5.05
3-11	10199	W. S. Barnard, advertising Clark county 1912 fair	10.00
3-11	10200	Robert F. Hildebrand, panorama view, stock parade 1912 fair	40.00
3-11	10201	Iowa Machinery and Supply Co., 4 check valves	4.32
3-11	10202	Iowa Telephone Co., toll bills, Oct., Nov., Dec., 1912, Jan., 1913	3.55
3-11	10203	S. G. McFadden, est. refund swine pen rent, 1912 fair	5.00

Date	No.	To Whom Issued		Amt.
3-11	10204	U. S. Express Co., express bills, September, 1912, January and February, 1913		3.75
3-11	10205	Wells Fargo & Co., express bills, September and November, 1912, January, 1913		5.45
3-11	10206	Western Union Telegraph Co., messages, October and December, 1912		1.05
3-13	10207	C. E. Cameron, per diem and mileage, Executive and Legislative Committee meeting		30.00
3-13	10208	O. A. Olson, per diem and mileage, Executive and Legislative Committee meeting		31.50
3-13	10209	E. J. Curtin, per diem and mileage, legislative committee meeting		35.50
3-13	10210	J. P. Mullen, per diem and mileage, legislative Committee meeting		27.70
3-21	10211	H. B. Frase, auditor Polk county, back taxes year 1911, lots 14 and 15, Cotton Mill Addition to Grant Park		13.02
3-24	10212	C. E. Cameron, per diem and mileage, Executive Committee meeting		38.00
3-24	10213	O. A. Olson, per diem and mileage, Executive Committee meeting		39.50
3-24	10214	J. P. Mullen, per diem and mileage, legislative committee meeting		31.70
3-24	10215	E. J. Curtin, per diem and mileage, Legislative Committee meeting		30.00
3-24	10216	Billboard Publishing Co., pro rata share advertising Chicago attraction meeting		6.00
3-25	10217	L. H. Kurtz, postmaster, postage 2,500 stallion bulletins		150.00
3-27	10218	Jno. Potts, hauling 20 loads cinders @ 90c		18.00
4- 1	10219	H. N. Whitney, salary, March, 1913		166.66
4- 2	10220	C. A. Nash, salary, March, 1913		125.00
4- 2	10221	Elsie Colton, salary, March, 1913		100.00
4- 2	10222	J. H. Deemer, salary, March, 1913		100.00
4- 2	10223	Edith K. Smith, salary, March, 1913		85.00
4 -2	10224	Minnie Anderson, salary extra clerk, March, 1913		65.00
4- 2	10225	Emma Daniels, salary extra clerk, March, 1913		65.00
4- 2	10226	Martha Coffin, salary extra clerk, March, 1913		65.00
4- 2	10227	Lenora Lennington, salary extra clerk, March, 1913		32.50
4- 2	10228	Nan Liljiquist, salary extra clerk, 5 days, March, 1913		12.50
4- 4	10229	A. R. Corey, Secretary, pay roll No. 6 (grounds) March 3-29, inclusive:		
		Dan Daughenbaugh, hauling cinders, 54 loads @ 90c	$ 48.60	
		Hoyt Woodward, hauling cinders, 51 loads @ 90c	45.90	
		A. H. Weihn, labor on grounds, 24 days @ $2.00	48.00	
		E. A. Snow, labor on grounds, 1 day @ $3.00	3.00	
		Leo Paul, hauling cinders, 22 loads @ 90c.	19.80	
		Geo. Whitney, foreman, 12 days @ $2.25	27.00	192.30
4- 4	10230	Void.		
4- 4	10231	A. R. Corey, Secretary, payroll folding Greater Iowa, April issue, 1913:		
		Gaile Stowell, ½ day @ $1.00	$ .50	
		Alfred Greene, ½ day @ $1.00	.50	
		Harry Carper, 1 day @ $1.00	1.00	
		LaVerne Hamborg, 1 day @ $1.00	1.00	
		Clarence Johnson, 1 day @ $1.00	1.00	
		John Cooper, ½ day @ $1.00	.50	
		Robt. McKee, 1½ days @ $1.00	1.50	6.00

Date	No.	To Whom Issued	Amt.
4- 4	10232	C. E. Cameron, per diem and mileage, Executive Committee meeting	30.00
4- 4	10233	O. A. Olson, per diem and mileage, Executive Committee meeting	31.50
4- 4	10234	E. J. Curtin, per diem and mileage, legislative committee meeting	39.50
4- 4	10235	J. P. Mullen, per diem and mileage, legislative committee meeting	27.70
4- 4	10236	H. L. Pike, per diem and mileage, committee work, premium list revision	36.00
4- 9	10237	C. E. Cameron, per diem and mileage board meeting	26.00
4- 9	10238	O. A. Olson, per diem and mileage board meeting	27.50
4- 9	10239	R. S. Johnston, per diem and mileage board meeting	27.80
4- 9	10240	E. M. Reeves, per diem and mileage board meeting	24.30
4- 9	10241	E. J. Curtin, per diem and mileage board meeting.	31.50
4- 9	10242	E. M. Wentworth, per diem and mileage, board meeting	18.00
4- 9	10243	C. F. Curtiss, per diem and mileage, board meeting	11.70
4- 9	10244	J. F. Summers, per diem and mileage, board meeting	28.00
4- 9	10245	J. P. Mullen, per diem and mileage, board meeting	23.70
4- 9	10246	H. L. Pike, per diem and mileage, board meeting..	32.60
4-10	10247	M. G. Thornburg, committee work, revising premium list, sheep department	2.91
4-11	10248	American Trotting Register Assn., Year Book, Vol. 28	4.00
4-11	10249	Bureau of Advertising, 3 forms multigraph letters	6.50
4-11	10250	G. W. Dietz, cement for walks, street car entrance	4.40
4-11	10251	Des Moines Water Co., water bills, November, December, 1912, and January, February, March, 1913	13.29
4-11	10252	S. Joseph & Sons, 2 watches, diary premiums and engraving cups and express on same, 1912 fair	53.32
4-11	10253	Hawkeye Machine and Brass Works, pointing and sharpening plow, grounds	2.00
4-11	10254	Iowa Press Clipping Bureau, clipping service—October 11, 1912, to March 11, 1913	20.00
4-11	10255	Iowa Lithographing Co., printing two forms diplomas, premiums dairy department	13.50
4-11	10256	J. M. Jamieson, binding 1912 award books	7.00
4-11	10257	Percheron Society of America, stud book, vol. 14..	3.00
4-11	10258	Stoner Wall Paper Co., papering farm house, grounds	6.84
4-11	10259	Moon Engraving Company, 16,500 letter heads, for board	105.00
4-11	10260	The Wapello Republican, expense advertising 1912 fair	5.28
4-11	10261	O. A. Olson, per diem, Executive Committee meetings	12.00
4-11	10262	J. P. Mullen, per diem, legislative committee meeting	12.00
4-16	10263	A. R. Corey, Secretary, payroll No. 7 (grounds) March 30-April 12, inclusive:	
		A. H. Weihn, labor on grounds, 11 days @ $2.00 ....$ 22.00	
		James Beck, 3 days 2 hours, labor on grounds @ $2.00 .... 6.40	
		E. A. Snow, labor on grounds, 3 days, 3 hours @ $3.00 .... 9.90	
		I. J. Whitmore, labor on grounds, 4 days 2 hours @ $2.00 .... 8.40	

Date	No.	To Whom Issued		Amt.
		Henry Grandgeorge, labor on grounds, 4 days 2 hours @ $2.50	10.50	
		Chas. Brennan, labor on grounds, 4 days, @ $2.00	8.40	
		George Whitney, foreman, 6 days 9 hours @ $2.25	15.53	
		Leo Paul, hauling cinders, 12 loads @ 90c	10.80	
		Leo Paul, labor on grounds, 2 hours @ $4.00	.80	
		Dan Daughenbaugh, hauling cinders, 4 loads @ 90c	3.60	
		Dan Daughenbaugh, labor on grounds, 3 days 2 hours @ $4,00	12.80	
		Hoyt Woodward, labor on grounds, 4 days 2 hours @ $4.00	16.80	125.93
4-17	10264	Joe Head, shoeing mule team, grounds		6.50
4-17	10265	E. J. Curtin, per diem and mileage legislative committee meeting		32.00
4-17	10266	C. E. Cameron, per diem Executive Committee meeting		36.00
4-17	10267	O. A. Olson, per diem and mileage Executive Committee meeting		35.50
4-17	10268	J. P. Mullen, per diem and mileage legislative committee meeting		27.70
4-19	10269	L. H. Kurtz, postmaster, postage		50.00
4-29	10270	A. R. Corey, secretary, pay roll No. 8 (grounds), April 13-April 26, inclusive:		
		M. Bennett, labor on grounds, 4 days at $2.00	$ 8.00	
		S. B. Brown, labor on grounds, 4 days 7 hours at $4.00	18.80	
		Chas. Morrison, labor on grounds, 2 days 1 hour at $3.50	7.35	
		Geo. Whitney, foreman, 12 days at $2.25	27.00	
		Dan Daughenbaugh, labor on grounds, 10 days 7 hours at $4.00	42.80	
		Hoyt Woodward, labor on grounds, 2 days at $4.00	8.00	
		Chas. Brennan, labor on grounds, 12 days at $2.00	24.00	
		Henry Grandgeorge, labor on grounds, 10 days at $2.50	25.00	
		A. H. Weihn, labor on grounds, 12 days at $2.00	24.00	
		I. J. Whitmer, labor on grounds, 12 days at $2.00	24.00	
		E. A. Snow, labor on grounds, one-half day at $3.00	1.50	210.45
4-29	10271	L. S. Casner, 52 6-7 bushels corn, mule and horse teams, grounds		22.20
4-30	10272	H. N. Whitney, salary, April, 1913		166.66
4-30	10273	C. A. Nash, salary, April, 1913		125.00
4-30	10274	Elsie Colton, salary, April, 1913		100.00
4-30	10275	J. H. Deemer, salary, April, 1913		100.00
4-30	10276	Minnie Anderson, salary, extra clerk, April, 1913		65.00
4-30	10277	Emma Daniels, salary, extra clerk, April, 1913		65.00
4-30	10278	Martha Coffin, salary, extra clerk, April, 1913		65.00
4-30	10279	Lenora Lennington, salary, extra clerk, April, 1913		65.00
4-30	10280	Mrs. E. W. Stone, salary, 25½ days, extra clerk, April, 1913		63.75
4-30	10281	Carrie Walton, salary, extra clerk, 10 days, April, 1913		25.00
4-30	10282	Nan Liljiquist, salary, extra clerk, 7 days, April, 1913		17.50

Date	No.	To Whom Issued	Amt.
5- 1	10283	Lawrence Burke, extra clerk, 5 days, April, 1913	9.00
5- 3	10284	Void.	
5- 5	10285	A. R. Corey, secretary, pay roll folding Greater Iowa, May issue, 1913:	
		Claude Adams, 1 day at $1.00 .... $ 1.00	
		Havel Cox, 1 day at $1.00 .... 1.00	
		Clarence Johnson, 1 day at $1.00 .... 1.00	
		Ruben Bergstron, 1 day at $1.00 .... 1.00	
		Lawrence Burke, 1 day at $1.50 .... 1.50	5.50
5- 5	10286	L. H. Kurtz, postmaster, postage	65.00
5- 5	10287	C. E. Cameron, per diem and mileage, Executive Committee meeting	30.00
5- 5	10288	O. A. Olson, per diem and mileage, Executive Committee meeting	31.50
5- 5	10289	C. F. Curtiss, special committee work, Women and Children's building	7.70
5- 5	10290	Joe Head, blacksmith work, grounds	3.95
5- 7	10291	C. E. Cameron, per diem and mileage, Executive Committee meeting	26.00
5- 7	10292	O. A. Olson, per diem and mileage Executive Committee meeting	27.50
5- 9	10293	Des Moines Commercial Club, reservation Jobbers' Excursion, May 13-15	37.50
5- 9	10294	C. E. Cameron, per diem and mileage board meeting, February 22, 1913	26.00
5- 9	10295	O. A. Olson, per diem and mileage board meeting, February 22, 1913	27.50
5- 9	10296	R. S. Johnson, per diem and mileage board meeting, February 22, 1913	27.80
5- 9	10297	C. W. Phillips, per diem and mileage board meeting, February 22, 1913	33.00
5- 9	10298	Elmer M. Reeves, per diem and mileage board meeting, February 22, 1913	24.30
5- 9	10299	E. J. Curtin, per diem and mileage board meeting, February 22, 1913	31.50
5- 9	10300	E. M. Wentworth, per diem and mileage board meeting, February 22, 1913	14.00
5- 9	10301	T. C. Legoe, per diem and mileage board meeting, February 22, 1913	20.50
5- 9	10302	C. F. Curtiss, per diem and mileage board meeting, February 22, 1913	7.70
5- 9	10303	J. F. Summers, per diem and mileage board meeting, February 22, 1913	28.00
5- 9	10304	J. P. Mullen, per diem and mileage board meeting, February 22, 1913	23.70
5- 9	10305	H. L. Pike, per diem and mileage board meeting, February 22, 1913	32.00
5-10	10306	C. L. Dahlberg & Co., reporting annual meeting, 3 days, 62 pages transcript	33.60
5-10	10307	Dale Taxicab Service, auto, representatives Winnipeg Fair, city to grounds and return	3.00
5-10	10308	Press Auto Livery, auto, legislative committee, 35th G. A. city to grounds and return	5.00
5-10	10309	Iowa Telephone Company, toll bills, February, March, April, 1913; exchange service grounds, November, 1912, to April, 1913, inclusive	25.75

Date	No.	To Whom Issued		Amt.
5-13	10310	A. R. Corey, secretary, pay roll No. 9 (grounds), April 27-May 10, inclusive:		
		Chas. Eberhart, labor on grounds, 4 days at $2.00	$ 8.00	
		Geo. Stafferton, labor on grounds, 4 days at $2.00	8.00	
		H. F. Deets, labor on grounds, 2 days 5 hours at $3.00	7.50	
		I. B. Brown, labor on grounds, 12 days 3 hours at $4.00	49.20	
		S. T. Wilson, labor on grounds, 4 days 5 hours at $2.00	9.00	
		M. Burnett, labor on grounds, 4 days at $2.00	8.00	
		Chas. Morrison, labor on grounds, 12 days at $3.50	42.00	
		Geo. Whitney, foreman, 12 days at $2.25	27.00	
		Dan Daughenbaugh, labor on grounds, 8 days 5 hours at $4.00	34.00	
		Chas. Brennan, labor on grounds, 9 days 2½ hours at $2.00	18.50	
		Henry Grandgeorge, labor on grounds, 9 days 5 hours at $2.50	23.75	
		A. H. Weihn, labor on grounds, 10 days at $2.00	20.00	
		E. A. Snow, labor on grounds, 1 day 9 hours at $3.00	5.70	
		I. J. Whitmer, labor on grounds, 10 days 5 hours at $2.00	21.00	
		Carl Heggen, labor on grounds, 6 days at $3.00	18.00	
		I. B. Brown, labor on grounds, one-half day at $2.00	1.00	
		Geo. Brookover, labor on grounds, 6 days at $2.00	12.00	
		Floyd Terrill, labor on grounds, 5 days 5 hours at $2.00	11.00	
		L. D. Bruner, labor on grounds, 5 days 5 hours at $2.00	11.00	
		Alex. Digh, labor on grounds, one-half day at $2.00	1.00	
		Frank Maricle, labor on grounds, 5 days 5 hours at $2.00	11.00	346.65
5-14	10311	U. S. Mote, mower repairs, grounds		4.00
5-14	10312	Louis Kurtz, postmaster, postage		60.00
5-15	10313	Lenora Lennington, one-half month salary, extra clerk, May, 1913		32.50
5-15	10314	Mrs. E. W. Stone, one-half month salary, extra clerk, May, 1913		32.50
5-15	10315	Carrie Walton, 11 days, extra clerk, May, 1913		27.50
5-17	10316	C. E. Cameron, per diem and mileage, board meeting		26.00
5-17	10317	O. A. Olson, per diem and mileage, board meeting		27.50
5-17	10318	R. S. Johnston, per diem and mileage, board meeting		27.80
5-17	10319	Elmer M. Reeves, per diem and mileage, board meeting		24.30
5-17	10320	E. J. Curtin, per diem and mileage, board meeting		31.50
5-17	10321	E. M. Wentworth, per diem and mileage, board meeting		18.00
5-17	10322	C. F. Curtiss, per diem and mileage, board meeting		11.70
5-17	10323	F. E. Sheldon, per diem and mileage, board meeting		24.30
5-17	10324	Jno. P. Mullen, per diem and mileage, board meeting		23.70
5-17	10325	H. L. Pike, per diem and mileage, board meeting		32.60
5-17	10326	O. O. Smith, first payment architect fees, Women and Children's building		750.00
5-21	10327	A. R. Corey, salary as secretary, April 23-30, inclusive		48.89

Date	No.	To Whom Issued		Amt.
5-21	10328	C. W. Phillips, per diem and mileage, auditing committee work		33.00
5-22	10329	Spirit of the West, advertising speed program, 1913 Futurity		112.50
5-24	10330	A. Olson, shingles game keeper's lodge, game preserve, grounds		11.88
5-31	10331	J. M. Brown, plastering game keeper's lodge, game preserve, grounds		33.36
5-31	10332	H. N. Whitney, salary, May, 1913		166.66
5-31	10333	A. R. Corey, salary, May, 1913		183.33
5-31	10334	C. A. Nash, salary, May, 1913		125.00
5-31	10335	Emma Daniels, salary, extra clerk, 15 days, May, 1913		32.50
5-31	10336	Elsie Colton, salary, May, 1913		100.00
5-31	10337	J. H. Deemer, salary, May, 1913		100.00
5-31	10338	Martha Coffin, salary, extra clerk, May, 1913		65.00
5-31	10339	Minnie Truax, salary, 24 days, extra clerk, May, 1913		60.00
5-31	10340	Mrs. E. W. Stone, salary, extra clerk, 11 days, May 19-28, inclusive		22.50
5-31	10341	Perry Ridenour, salary, office boy, 14½ days, May 1913		18.02
6- 2	10342	A. R. Corey, secretary, pay roll No. 10 (grounds), May 11-24, inclusive:		
		Jas. Fredrigill, labor on grounds, 9 days 3½ hours at $4.00	$ 37.40	
		Jno. Olson, labor on grounds, 9 days 9½ hours at $2.00	19.90	
		Frank Maricle, labor on grounds, 9 days 9½ hours at $2.00	19.90	
		L. D. Bruner, labor on grounds, 9 days 9 hours at $2.00	19.80	
		Carl Heggen, labor on grounds, 10 days 7½ hours at $3.00	32.25	
		I. J. Whitmer, labor on grounds, 10 days 3½ hours @ $2.00	20.70	
		A. H. Weihn, labor on grounds, 12 days at $2.00	24.00	
		Henry Grandgeorge, labor on grounds, 11 days 6 hours at $2.50	29.00	
		Chas. Brennan, labor on grounds, 9 days 8½ hours at $2.00	19.70	
		Dan Daughenbaugh, labor on grounds, 4 days 7 hours @ $4.00	18.80	
		Geo. Whitney, foreman, 12 days at $2.25	27.00	
		Chas. Morrison, labor on grounds, 8 days 5 hours at $3.50	29.75	
		M. Burnett, labor on grounds, 11 days 6 hours at $2.00	23.20	
		S. T. Wilson, labor on grounds, 8 days 3½ hours at $2.00	16.70	
		I. B. Brown, labor on grounds, 10 days 3½ hours at $4.00	41.40	
		I. B. Brown, labor on grounds, 9 days 9 hours at $4.00	39.60	
		Geo. Stafferton, labor on grounds, 10 days 4½ hours at $2.00	20.90	
		Chas. Eberhardt, labor on grounds, 1 day at $2.00	2.00	
		H. P. Stouffel, labor on grounds, 12 days at $3.00	36.00	
		Floyd Terrill, labor on grounds, 9 days 6 hours at $2.00	19.20	
		Al Shepherd, labor on grounds, 6 days at $2.50	15.00	
		D. C. King, labor on grounds, 6 days at $2.50	15.00	
		H. F. Deets, labor on grounds, 4 days at $3.00	12.00	
		Theo Broerman, labor on grounds, 5 days at $1.75	8.75	
		Fred Gutschall, labor on grounds, 4 days 8 hours at $2.00	9.60	
		Leo Paul, labor on grounds, 8 days 3 hours at $4.00	33.20	
		Ford Von Voorhes, labor on grounds, 12 days at $2.00	24.00	614.75

Date	No.	To Whom Issued		Amt.
6- 2	10343	A. R. Corey, secretary, pay roll folding Greater Iowa, June issue, 1913:		
		Virgil Still, three-fourths day at $1.00	$ .75	
		Waldo Scott, 1 day at $1.00	1.00	
		Clarence Johnson, 1 day at $1.00	1.00	
		Saul Sundberg, 1 day at $1.00	1.00	
		Vern Johnson, 1 day at $1.00	1.00	4.75
6- 3	10344	L. H. Kurtz, postmaster, postage		60.00
6- 4	10345	C. E. Cameron, expense attending meeting Western State Fairs, St. Paul		21.59
6- 4	10346	O. A. Olson, expense attending meeting Western State Fairs, St. Paul		14.93
6- 4	10347	A. R. Corey, expense attending meeting Western State Fairs, St. Paul		27.20
6- 4	10348	C. E. Cameron, per diem and mileage, Executive Committee meeting		26.00
6- 4	10349	O. A. Olson, per diem and mileage, Executive Committee meeting		27.50
6- 6	10350	Joe Head, blacksmith work, grounds		5.65
6- 7	10351	H. M. Kinsell, payment on contract for moving Woman's Rest Cottage		50.00
6- 7	10352	H. M. Kinsell, second payment on contract for moving Woman's Rest Cottage		50.00
6- 9	10353	A. Olson, painting roof street car entrance		29.00
6- 9	10354	A. R. Corey, secretary, pay roll No. 11 (grounds), May 25-June 7, inclusive:		
		Leonard Millard, 1 day @ $1.00	$ 1.00	
		C. H. Cantrill, labor on grounds, 3 days @ $2.00	6.00	
		Clarence Wright, labor on grounds, 3 days @ $1.50	4.50	
		Wm. Barton, labor on grounds, 6 days @ $3.00	18.00	
		Chas. Morrison, labor on grounds, 12 days 2 hours @ $3.50	42.70	
		Jno. Shelton, labor on grounds, 2 days @ $1.00	2.00	
		Grant Allen, labor on grounds, 6 days @ $2.00	12.00	
		H. P. Stouffer, labor on grounds, 9 days 1 hour @ $3.00	27.30	
		M. Burnett, labor on grounds, 11 days @ $2.00	22.00	
		Ford Van Voorhes, labor on grounds, 11 days $2.00	22.00	
		D. C. King, labor on grounds, 6 days @ $2.50	15.00	
		H. F. Deets, labor on grounds, 9 days 3 hours @ $3.00	27.90	
		Fred Gutshall, labor on grounds, 9 days @ $2.00	18.00	
		C. Johnson, labor on grounds, 6 days @ $2.00	12.00	
		Jas. Beck, labor on grounds, 8 days 5 hours @ $2.50	21.25	
		Floyd Terrill, labor on grounds, 1 day @ $2.00	2.00	
		Theo Broerman, labor on grounds, 6 days 5 hours @ $1.75	11.38	
		Geo. Stafferton, labor on grounds, 10 days 5 hours @ $2.00	21.00	
		S. T. Wilson, labor on grounds, 10 days @ $2.00	20.00	

Date	No.	To Whom Issued		Amt.
6- 9	10354	A. R. Corey, secretary, pay roll No. 11 (grounds), May 25-June 7, inclusive—Continued.		
		Chas. Brennan, labor on grounds, 10 days @ $2.00	20.00	
		Geo. Whitney, foreman, 11 days @ $2.25	24.75	
		Henry Grandgeorge, labor on grounds, 10 days 5 hours @ $2.50	26.25	
		I. J. Whitmer, labor on grounds, 11 days @ $2.00	22.00	
		A. H. Weihn, labor on grounds, 11 days @ $2.00	22.00	
		Jas. Fredrigill, labor on grounds, 11 days 9 hours @ $5.00	59.50	
		Jno. Olson, labor on grounds, 10 days 5 hours @ $2.00	21.00	
		Frank Maricle, labor on grounds, 10 days 5 hours @ $2.00	21.00	
		L. D. Bruner, labor on grounds, 6 days 5 hours @ $2.00	13.00	
		Carl Heggen, labor on grounds, 10 days 7 hours @ $3.00	32.10	
		I. B. Brown, labor on grounds, 10 days @ $4.00	40.00	
		I. B. Brown, labor on grounds, 10 days @ $4.00	40.00	
		Leo Paul, labor on grounds, 10 days @ $4.00	40.00	687.63
6-10	10355	Tuttle's Letter Shop, folding 10,000 circulars		2.50
6-10	10356	Thorson and Harper, 2 photos and 2 prints, old stock barn		6.00
6-10	10357	J. E. Lovejoy, balance on contract for horse barn, built in 1912		300.00
6-10	10358	Iowa Telephone Company, telephone system improvements on grounds during years, 1911-12		639.83
6-10	10359	Des Moines Electric Co., supplies for sub-station, grounds		2.40
6-10	10360	Des Moines Stationery Co., one Belknap Rapid Addressing Machine, one stencil filing cabinet and miscellaneous supplies for same		235.72
6-10	10361	Orcutt Mfg. Co., box for filing photographs		5.00
6-10	10362	Peter Malcolm, stallion examination, Ossian, Iowa		10.00
6-10	10363	B. Harmon, stallion examination, Ossian, Iowa		7.25
6-11	10364	C. E. Cameron, per diem and mileage, Executive Committee meeting		30.00
6-11	10365	O. A. Olson, per diem and mileage, Executive Committee meeting		31.50
6-11	10366	L. H. Kurtz, postmaster, postage		15.00
6-12	10367	L. H. Kurtz, postmaster, postage 2425 premium lists		97.00
6-13	10368	J. F. Summers, per diem and mileage, privilege work		28.00
6-13	10369	H. M. Kinsell, final payment moving rest cottage		50.00
6-14	10370	R. T. Jones, 100 bushel oats, mule and horse teams, grounds		38.00
6-17	10371	A. Olson, shingling grocery store, grounds		12.80
6-17	10372	Seick Tent and Awning Co., canvas cover for Grand Avenue entrance		70.20
6-17	10373	Iowa Telephone Co., toll bill, Ames station		.25
6-18	10374	C. E. Cameron, per diem and mileage, Executive Committee meeting		30.00

Date	No.	To Whom Issued		Amt.
6-18	10375	O. A. Olson, per diem and mileage, Executive Committee meeting		31.50
6-19	10376	C. N. McIlvaine, Secretary, prorata share advertising speed program, Iowa, Nebraska and South Dakota circuit		73.25
6-20	10377	L. H. Kurtz, postmaster, postage 2000 premium lists		80.00
6-21	10378	Iowa Telephone Company, toll bill, Ames station..		.25
6-23	10379	Louis Kurtz, postmaster, postage 2575 premium lists		103.00
6-23	10380	Louis Kurtz, postmaster, postage 3 issues Greater Iowa, April, May and June, 1913		14.10
6-24	10381	A. R. Corey, secretary, pay roll No. 12 (grounds), June 8-21, inclusive:		
		Chas. Meade, labor on grounds, 2 days @ $3.00	$ 6.00	
		Don Paul, labor on grounds, 2 days @ $3.00	6.00	
		Harvey Wilton, labor on grounds, 5½ days @ $2.00	11.00	
		C. H. Cantrill, labor on grounds, 3 days @ $2.00	6.00	
		Geo. Whitney, foreman, 12 days @ $2.50	30.00	
		Dan Faircloth, labor on grounds, 8 days @ $2.50	20.00	
		Wm. Barton, labor on grounds, 12 days @ $3.00	36.00	
		C. Johnson, labor on grounds, 6 days 5 hours @ $2.00	13.00	
		Jas. Beck, labor on grounds, 10 days 9 hours @ $2.50	27.25	
		H. P. Stouffer, labor on grounds, 10 days 9 hours @ $3.00	32.70	
		M. Burnett, labor on grounds, 12 days @ $2.00	24.00	
		Ford Van Voorhes, labor on grounds, 12 days @ $2.00	24.00	
		D. C. King, labor on grounds, 6 days @ $2.50	15.00	
		Wm. Robinson, labor on grounds, 6 days @ $2.25	13.50	
		Theo Dokoss, labor on grounds, 5 days @ $2.00	10.00	
		Theo Broerman, labor on grounds, 11 days 8 hours @ $1.75	20.65	
		R. J. Marshall, labor on grounds, 11 days @ $2.00	22.00	
		W. H. Anderson, labor on grounds, 2 days 8 hours @ $2.00	5.60	
		Geo. Whitmer, labor on grounds, 5 days 8 hours @ $2.00	11.60	
		Fode Burnett, labor on grounds, 7 days @ $1.00	7.00	
		Kenwith Fredrigill, labor on grounds, 7 days @ $1.00	7.00	
		Leonard Millard, labor on grounds, 3 days @ $1.00	3.00	
		Clarence Wright, labor on grounds, 2 days @ $1.50	3.00	
		Grant Allen, labor on grounds, 11 days @ $2.00	22.00	

Date	No.	To Whom Issued		Amt.
6-21	10381	A. R. Corey, secretary, pay roll No. 12 (grounds), June 8-21, inclusive—Continued.		
		H. F. Deets, labor on grounds, 12 days 7 hours @ $3.00	38.10	
		Fred Gutshall, labor on grounds, 12 days @ $2.00	24.00	
		Floyd Terrill, labor on grounds, 1 day @ $2.00	2.00	
		Geo. Stafferton, labor on grounds, 7 days 5 hours @ $2.00	15.00	
		S. T. Wilson, labor on grounds, 10 days 8 hours @ $2.00	21.60	
		Chas. Brennan, labor on grounds, 11 days 8 hours @ $2.00	23.60	
		Henry Grandgeorge, labor on grounds, 10 days 9 hours @ $2.50	27.25	
		I. J. Whitmer, labor on grounds, 11 days 8 hours @ $2.00	23.60	
		Jno. Olson, labor on grounds, 11 days 9 hours @ $2.00	23.80	
		Frank Maricle, labor on grounds, 11 days 8 hours @ $2.00	23.60	
		Jas. Fredrigill, labor on grounds, 11 days 9 hours @ $5.00	59.50	
		E. H. Howard, labor on grounds, 11 days @ $2.00	22.00	
		A. H. Weihn, labor on grounds, 12 days @ $2.00	24.00	
		Carl Heggen, labor on grounds, 11 days 8 hours @ $3.00	35.40	
		Leo Paul, labor on grounds, 11 days 8 hours @ $4.00	47.20	
		I. B. Brown, labor on grounds, 10 days 8 hours @ $4.00	43.20	
		I. B. Brown, labor on grounds, 10 days 4 hours @ $4.00	41.60	
		Chas. Morrison, labor on grounds, 4 days @ $4.00	16.00	
		Chas. Morrison, labor on grounds, 8 days @ $2.00	16.00	
		Chas. Morrison, labor on grounds, 12 days @ $3.50	42.00	945.75
6-25	10382	J. F. Summers, per diem and mileage, privilege work and meeting with legislative committee		24.00
6-26	10383	L. H. Kurtz, postmaster, postage 2275 premium lists		91.00
6-26	10384	Geo. Sherman, office boy 4¾ days		4.75
6-27	10385	L. H. Kurtz, postmaster, postage		60.00
6-28	10386	Potts Bros., 1st estimate cement walk contract		500.00
6-28	10387	A. Olson, payment on contract painting roof new horse barn		30.00
6-28	10388	Edith K. Smith, salary May, 1913		85.00
6-28	10389	Anna Murphy, extra clerk 18 days, May, 1913		45.00
6-28	10390	J. F. Summers, per diem and mileage, privilege work		28.00
6-30	10391	A. R. Corey, salary, June, 1913		183.33
6-30	10392	H. N. Whitney, salary, June, 1913		166.66
6-30	10393	C. A. Nash, salary, June, 1913		125.00
6-30	10394	Elsie Colton, salary, June, 1913		100.00
6-30	10395	J. H. Deemer, salary, June, 1913		100.00

Date	No.	To Whom Issued		Amt.
6-30	10396	Edith K. Smith, salary 6 days, June, 1913		20.40
6-30	10397	Martha Coffin, salary extra clerk, June, 1913		65.00
6-30	10398	Minnie Truax, salary, extra clerk, June, 1913		65.00
6-30	10399	Clifford Heer, salary extra clerk 13 days, June, 1913		32.50
6-30	10400	Perry Ridenour, salary office boy 20½ days, June, 1913		25.62
6-30	10401	Chas. Weitz & Son, repairs Exposition building		50.33
7- 5	10402	C. E. Cameron, per diem and mileage, Executive Committee meeting		30.00
7- 5	10403	O. A. Olson, per diem and mileage, Executive Committee meeting		31.50
7- 5	10404	J. P. Mullen, special committee work, machinery department		27.70
7- 5	10405	A. R. Corey, Secretary, payroll folding Greater Iowa, July issue, 1913:		
		Ellis Zeichek, ½ day @ $1.00	$ .50	
		Gail Stowell, ¾ day @ $1.00	.75	
		Carl Hohnen, 9-10 day @ $1.00	.90	
		Roswell Armstrong, 8½ hours @ $1.00	.85	
		Albert Blake, ¾ day @ $1.00	.75	
		Havel Cox, 1¼ days @ $1.00	1.25	
		Alfred Green, 1 day @ $1.00	1.00	
		Voight Trent, ¼ day @ $1.00	.25	6.25
7- 7	10406	Louis Kurtz, postmaster, postage July issue Greater Iowa		5.79
7- 8	10407	A. R. Corey, Secretary, payroll No. 13 (grounds) June 22-July 5, inclusive:		
		W. H. Anderson, labor on grounds, 6 days @ $2.00	$ 12.00	
		Frank Berg, labor on grounds, 5 days 2½ hours @ $2.00	10.50	
		Geo. Stafferton, labor on grounds, ½ day @ $2.00	1.00	
		Ted Woodward, labor on grounds, 5 days @ $2.00	10.00	
		Chas. Sanders, labor on grounds, 3 days @ $2.50	7.50	
		Elmer Burk, labor on grounds, 3 days @ $2.50	7.50	
		Eugene Parker, labor on grounds, 5 days @ $2.00	10.00	
		Walter Hunt, labor on grounds, 9 days @ $3.00	27.00	
		Dave Wright, labor on grounds, 13 days 9 hours @ $2.00	27.80	
		Leo Paul, labor on grounds, 11 days @ $4.00	44.00	
		Chas. Morrison, labor on grounds, 13 days @ $4.00	52.00	
		Chas. Morrison, labor on grounds, 14 days @ $3.50	49.00	
		I. B. Brown, labor on grounds, 10 days 5 hours @ $4.00	42.00	
		I. B. Brown, labor on grounds, 10 days 5 hours @ $4.00	42.00	
		Carl Heggen, labor on grounds, 11 days @ $3.00	33.00	
		A. H. Weihn, labor on grounds, 11 days @ $2.00	22.00	
		Frank Marick, labor on grounds, 10 days @ $2.00	20.00	

Date	No.	To Whom Issued		Amt.
7- 8	10407	A. R. Corey, secretary, pay roll No. 13 (grounds) June 22-July 5, inclusive—Continued.		
		Jno. Olson, labor on grounds, 11 days @ $2.00	22.00	
		J. J. Whitmer, labor on grounds, 11 days @ $2.00	22.00	
		Henry Grandgeorge, labor on grounds, 9 days 8 hours @ $2.50	24.50	
		Chas. Brennan, labor on grounds, 10 days @ $2.00	20.00	
		S. T. Wilson, labor on grounds, 7 days 2 hours @ $2.00	14.40	
		Floyd Terrill, labor on grounds, 3 days @ $2.00	6.00	
		Theo Broerman, labor on grounds, 9 days 7 hours @ $1.75	16.98	
		Fred Gutshall, labor on grounds, 10 days 3 hours @ $2.00	20.60	
		Erwin Deemer, office boy, 12 days @ $1.50	18.00	
		Grant Allen, labor on grounds, 11 days @ $2.00	22.00	
		George Whitmer, labor on grounds, 11 days @ $2.00	22.00	
		Austin Day, labor on grounds, 7 hours @ 20c	1.40	
		H. F. Deets, foreman, 4 days @ $3.00	12.00	
		Kenneth Fredrigill, water boy, 11 days @ $1.00	11.00	
		Fodie Burnett, labor on grounds, 10 days @ $1.00	10.00	
		Don Paul, labor on grounds, 11 days @ $2.00	22.00	
		Jas. Beck, labor on grounds, 9 days 2½ hours @ $2.50	23.63	
		Chas. Meade, labor on grounds, 11 days @ $3.00	33.00	
		Wm. Barton, labor on grounds, 11 days @ $3.00	33.00	
		Jas. Fredregill, labor on grounds, 11 days @ $5.00	55.00	
		Don Faircloth, labor on grounds, 10 days @ $2.50	25.00	
		Harvey Welton, labor on grounds, 8 days 5 hours @ $2.00	17.00	
		Wm. Robinson, labor on grounds, 9 days @ $2.25	20.25	
		Theo Dokoss, labor on grounds, 9 days 7½ hours @ $2.00	19.50	
		D. C. King, labor on grounds, 5½ days @ $2.50	13.75	
		Ford Van Voorhes, labor on grounds, 10 days @ $2.50	25.00	
		M. Burnett, labor on grounds, 10 days @ $2.00	20.00	
		H. P. Stouffer, labor on grounds, 10 days @ $3.00	30.00	
		Henry Tschontz, labor on grounds, 1 day @ $2.00	2.00	
		Geo. Whitney, foreman, 18 days 1 hour @ $2.75	49.77	1,049.08

Date	No.	To Whom Issued		Amt.
7- 8	10408	J. L. Moyer, hauling 30 yards of sand		25.50
7- 8	10409	D. E. Thomas, engineering work, Women and Children's Building and walks, grounds		181.12
7-10	10410	A. Olson, final payment on contract, painting roof new horse barn		95.00
7-11	10411	H. M. Kinsell, payment on contract, moving closet		50.00
7-12	10412	Potts Bros., second estimate cement work contract		500.00
7-12	10413	J. F. Summers, per diem and mileage, privilege work		28.00
7-14	10414	L. H. Kurtz, postmaster, postage		60.00
7-14	10415	H. M. Kinsell, payment on contract, house moving		25.00
7-22	10416	A. R. Corey, secretary, pay roll No. 14 (grounds), July 6-9, inclusive:		
		Don Paul, labor on grounds, 11 days 9 hours @ $2.25	$ 26.78	
		Wm. Waller, labor on grounds, 9 days @ $2.00	18.00	
		Jno. Kalny, labor on grounds, 7 days 5 hours @ $2.00	15.00	
		Jno. Lewis, labor on grounds, 6 days @ $2.00	12.00	
		Ivor Grylls, labor on grounds, 4 days @ $2.00	8.00	
		Erwin Deemer, labor on grounds, 12 days @ $1.50	18.00	
		W. Barnicoat, labor on grounds, 11 days @ $2.50	27.50	
		Fred Anderson, labor on grounds, 5 days @ $2.00	10.00	
		Chas. Daughenbaugh, labor on grounds, 5 days @ $2.00	10.00	
		Eugene Parker, labor on grounds, 7 days 5 hours @ $2.00	15.00	
		Wm. Barton, labor on grounds, 12 days @ $3.00	36.00	
		Jas. Beck, labor on grounds, 12 days @ $2.50	30.00	
		Theo Dokoss, labor on grounds, 11 days @ $2.00	22.00	
		Will Robinson, labor on grounds, 12 days @ $2.25	27.00	
		Harvey Welton, labor on grounds, 9 days 5 hours @ $2.00	19.00	
		H. P. Stouffer, foreman, 11 days 5 hours @ $3.00	34.50	
		D. C. King, labor on grounds, 6 days @ $2.50	15.00	
		Dan Faircloth, labor on grounds, 12 days @ $2.50	30.00	
		Ford Van Voorhes, labor on grounds, 12 days @ $2.50	30.00	
		M. Burnett, labor on grounds, 9 days 8 hours @ $2.00	19.60	
		Walter Hunt, labor on grounds, 12 days @ $3.00	36.00	
		Fred Gutshall, labor on grounds, 10 days 6 hours @ $2.00	21.20	
		Theo Broerman, labor on grounds, 11 days 5 hours @ $1.75	20.12	
		Geo. Whitney, foreman, 13 days 8 hours @ $2.75	37.95	
		W. H. Anderson, labor on grounds, 8 days, 5 hours @ $2.00	17.00	
		Geo. Whitmer, labor on grounds, 11 days 5 hours @ $2.00	23.00	

Date	No.	To Whom Issued	Amt.
7-22	10416	A. R. Corey, secretary, pay roll No. 14 (grounds), July 6-9, inclusive—Continued.	
		Kenneth Fredrigill, labor on grounds, 12 days @ $1.00	12.00
		James Fredrigill, labor on grounds, 12 days @ $5.00	60.00
		Harry Tschontz, labor on grounds, 12 days @ $2.00	24.00
		Fodie Burnett, labor on grounds, 12 days @ $1.00	12.00
		Jno. Williams, labor on grounds, 11 days 5 hours @ $2.00	23.00
		Frank Maricle, labor on grounds, 5 days 5 hours @ $2.00	11.00
		S. T. Wilson, labor on grounds, 5 days 5 hours @ $2.00	11.00
		Jno. Olson, labor on grounds, 12 days @ $2.00	24.00
		Lawrence Boutin, labor on grounds, 6 days @ $2.00	12.00
		Chas. Saunders, labor on grounds, 2 days 5 hours @ $2.50	6.25
		Chas. Meade, labor on grounds, 11 days 7 hours @ $3.00	35.10
		Elmer Burk, labor on grounds, 2 days 5 hours @ $2.50	6.25
		Frank Berg, labor on grounds, 12 days @ $2.00	24.00
		Nathan Williams, labor on grounds, 11 days 5 hours @ $2.50	28.75
		Jno. Ellington, labor on grounds, 7 days @ $2.50	17.50
		Grant Allen, labor on grounds, 10 days 5 hours @ $2.00	21.00
		J. W. Sego, labor on grounds, 2 days @ $2.00	4.00
		J. J. Whitmer, labor on grounds, 11 days 5 hours @ $2.00	23.00
		Henry Grandgeorge, labor on grounds, 10 days 7½ hours @ $2.50	26.87
		Dave Wright, labor on grounds, 12 days @ $2.00	24.00
		A. M. Dawson, labor on grounds, 11 days 5 hours @ $4.00	46.00
		Carl Heggen, labor on grounds, 11 days 5 hours @ $3.00	34.50
		A. H. Weihn, labor on grounds, 9 days @ $2.00	18.00
		I. B. Brown, labor on grounds, 11 days @ $4.00	44.00
		I. B. Brown, labor on grounds, 10 days 5 hours @ $4.00	42.00
		Chas. Morrison, labor on grounds, 12 days @ $3.50	42.00
		Chas. Morrison, labor on grounds, 11 days @ $4.00	44.00
		Jno. Brown, labor on grounds, 11 days 5 hours @ $4.00	46.00
		Leo Paul, labor on grounds, 11 days 5 hours @ $4.00	46.00
		Ted Woodward, labor on grounds, 12 days @ $2.00	24.00
		R. E. McLaughlin, labor on light plant, 105 hours @ 42.7c	44.84

Date	No.	To Whom Issued		Amt.
7-22	10416	A. R. Corey, secretary, pay roll No. 11 (grounds), July 6-9, inclusive—Continued.		
		J. McLennan, labor on light plant, 75 hours @ 39c	29.25	
		H. Reynold, labor on light plant, 78 hours @ 39c	30.42	1,475.38
7-22	10417	Jno. Shovers, first payment, grading contract Women and Children's building		262.50
7-22	10418	A. Olson, painting roof swine pavilion		27.50
7-24	10419	Potts Bros., third estimate cement work contract		1,000.00
7-24	10420	Des Moines Union Railway Company, freight, 16 drums calcium chloride for track use		31.99
7-25	10421	H. M. Kinsell, payment on moving miscellaneous buildings		100.00
7-25	10422	H. M. Kinsell, final payment on moving miscellaneous buildings		105.00
7-26	10423	Rudge and Guenzel Co., floral tribute funeral Mrs. W. R. Mellor, wife secretary of the Nebraska State Fair		5.00
7-26	10424	Iowa Short Horn Breeders' Assn., full payment for their office building, used as post office on grounds		100.00
7-26	10245	Chas. Sanders, full payment contract, painting roof stock pavilion		75.00
7-28	10426	M. L. Markham, distributing advertising matter		10.00
7-28	10427	A. Olson, painting roof dining hall and grocery store deck		26.00
7-29	10428	L. H. Kurtz, postmaster, postage		100.00
7-29	10429	C. E. Cameron, expense attending railroad rate hearing Council Bluffs		12.68
7-29	10430	O. A. Olson, expense attending railroad rate hearing Council Bluffs		11.58
7-29	10431	A. R. Corey, expense attending railroad rate hearing Council Bluffs		11.78
7-29	10432	C. E. Cameron, per diem and mileage, Executive Committee meeting		30.00
7-29	10433	O. A. Olson, per diem and mileage, Executive Committee meeting		31.50
7-30	10434	C. E. Cameron, per diem and mileage, Executive Committee meeting		26.00
7-30	10435	O. A. Olson, per diem and mileage, Executive Committee meeting		27.50
7-31	10436	A. R. Corey, salary, July, 1913		183.33
7-31	10437	H. N. Whitney, salary, July, 1913		166.66
7-31	10438	C. A. Nash, salary, July, 1913		125.00
7-31	10439	Elsie Colton, salary, July, 1913		100.00
7-31	10440	J. H. Deemer, salary, July, 1913		100.00
7-31	10441	Edith K. Smith, salary, July, 1913		85.00
7-31	10442	Minnie Truax, salary, July, 1913		75.00
7-31	10443	Clifford Heer, salary extra clerk, July, 1913		75.00
7-31	10444	Geo. K. Scott, salary extra clerk, July, 1913		42.00
7-31	10445	Perry Ridenour, office boy 26 days, July, 1913		32.50
7-31	10446	Urban Portel, office boy 12 days, July, 1913		12.00
7-31	10447	Jeanette Williams, extra clerk 3 days, July, 1913		6.00
7-31	10448	Mrs. E. W. Stone, extra clerk 2 days, July, 1913		5.00
7-31	10449	Des Moines Union Railway Company, freight, street sprinkler attachments		40.00
8-1	10450	C. B. & Q. Ry., freight, 6 rapid feeders		6.96

Date	No.	To Whom Issued		Amt.
8- 2	10451	W. M. Peters, 8 tons 135 lbs. oat straw, 37 tons 1,890 lbs. wheat straw, forage department.....		238.14
8- 2	10452	T. C. Legoe, per diem and mileage, committee work Fine Arts department........................		20.50
8- 4	10453	Potts Bros., fourth estimate cement work contract		500.00
8- 4	10454	Ben C. Phillips, advertising Jackson county, 1913 fair		15.00
8- 4	10455	W. H. Knight, Secretary, 10% suspension collected O. B. West, 1912 fair		1.50
8- 4	10456	E. M. Wentworth, per diem and mileage, committee work, public safety department		22.00
8- 4	10457	A. R. Corey, Secretary, payroll No. 15 (grounds) July 20-August 2, inclusive:		
		H. P. Stouffer, foreman, 12 days @ $3.00....	$ 36.00	
		Walter Hunt, labor on grounds, 12 days @ $3.00	36.00	
		Jas. Beck, labor on grounds, 12 days @ $2.50.	30.00	
		Nathan Williams, labor on grounds, 11 days 5 hours @ $2.50	28.75	
		W. Barncoat, labor on grounds, 12 days @ $2.50	30.00	
		D. C. King, labor on grounds, 6 days @ $2.50	15.00	
		Dan Faircloth, labor on grounds, 12 days @ $2.50	30.00	
		Ford Van Voorhees, labor on grounds, 12 days @ $2.50	30.00	
		M. Burnett, labor on grounds, 6 days @ $2.00.	12.00	
		Harvey Welton, labor on grounds, 11 days @ $2.00	22.00	
		Theo Dakoss, labor on grounds, 12 days @ $2.00	24.00	
		Frank Berg, labor on ground, 12 days @ $2.00	24.00	
		Wm. Barton, labor on grounds, 12 days @ $3.00	36.00	
		J. Fredrigill, labor on grounds, 13 days @ $5.00	65.00	
		Kenneth Fredrigill, labor on grounds, 12 days @ $1.00	12.00	
		Fodie Burnett, labor on grounds, 12 days @ $1.00	12.00	
		Geo. Whitney, foreman, 11 days 1 hour @ $2.25	30.52	
		Erwin Deemer, labor on grounds, 12 days @ $1.50	18.00	
		R. E. McLaughlin, labor on light plant, 108 hours @ 42.7c	46.02	
		J. McLennan, labor on light plant, 11 days @ $3.50	38.50	
		H. Reynolds, labor on light plant, 101 hours @ 39c	39.28	
		Ted Woodward, labor on light plant, 12 days @ $2.00	24.00	
		Chas. Meade, labor on grounds, 12 days @ $3.00	36.00	
		Don Paul, labor on grounds, 12 days @ $2.25.	27.00	
		Wm. Robinson, labor on grounds, 11 days 5 hours @ $2.25	25.88	
		Henry Grandgeorge, labor on grounds, 13 days at $2.50............................	32.50	

Date	No.	To Whom Issued		Amt.
8- 4	10457	A. R. Corey, Secretary, payroll No. 15 (grounds) July 20-August 2, inclusive—Continued.		
		Chas. Daughenbaugh, labor on grounds, 12 days @ $2.00	24.00	
		Ivor Grylls, labor on grounds, 13 days @ $2.00	26.00	
		Jno. Lewis, labor on grounds, 1 day @ $2.00	2.00	
		Jno. Kalny, labor on grounds, 13 days @ $2.00	26.00	
		Wm. Waller, labor on grounds, 12 days @ $2.00	24.00	
		Dave Wright, labor on grounds, 12 days @ $2.00	24.00	
		I. J. Whitmer, labor on grounds, 12 days @ $2.00	24.00	
		Grant Allen, labor on grounds, 12 days @ $2.00	24.00	
		W. H. Anderson, labor on grounds, 12 days @ $2.00	24.00	
		Geo. Whitmer, labor on grounds, 12 days @ $2.00	24.00	
		Theo Broerman, labor on grounds, 12 days @ $1.75	21.00	
		Harry Tschontz, labor on grounds, 13 days @ $2.00	26.00	
		Jno. Olson, labor on grounds, 12 days @ $2.00	24.00	
		Fred Anderson, labor on grounds, 1 day @ $2.00	2.00	
		A. H. Weihn, labor on grounds, 11 days 5 hrs. @ $2.00	23.00	
		Carl Heggen, labor on grounds, 12 days @ $3.00	36.00	
		Chas. Morrison, labor on grounds, 11 days @ $3.50	38.50	
		Chas. Morrison, labor on grounds, 11 days 5 hrs. @ $4.00	46.00	
		A. W. Shaw, labor on grounds, 10 days 5 hrs. @ $4.00	42.00	
		I. B. Brown, labor on grounds, 9 days 4 hrs. @ $4.00	37.60	
		I. B. Brown, labor on grounds, 2 days @ $4.00	8.00	
		Jno. Brown, labor on grounds, 12 days @ $4.00	48.00	
		Leo Paul, labor on grounds, 9 days @ $4.00	36.00	
		C. E. Johnson, labor on grounds, 12 days @ $2.00	24.00	
		Allen McBirney, labor on grounds, 12 days @ $2.00	24.00	
		Geo. Mizner, labor on grounds, 6 days @ $2.00	12.00	
		C. S. Hamilton, labor on grounds, 2-10 day @ $2.50	.50	
		Albert Spevack, labor on grounds, 4 days 7 hrs. @ $2.50	11.75	
		T. C. Reeve, labor on grounds, 5 days @ $2.50	12.50	
		C. D. Grant, labor on grounds, 4 days @ $3.00	12.00	
		Frank Maricle, labor on grounds, ½ day @ $2.00	1.00	
		Jno. Wright, labor on grounds, 5 days 5 hrs. @ $2.00	11.00	
		Leo Paul, labor on grounds, 2 days @ $2.00.	4.00	
		Isadore Stone, labor on grounds, 3 days @ $1.50	4.50	1,487.80

Date	No.	To Whom Issued	Amt.
8- 6	10458	Moon Printing Co., first payment printing 1913...	100.00
8- 6	10459	J. F. Summers, per diem and mileage, privilege work	28.00
8- 6	10460	J. F. Summers, per diem and mileage, privilege work	32.00
8- 7	10461	A. Olson, laying 13½ M shingles, dining hall......	16.88
8- 8	10462	J. W. Clark, 4 tons 1645 lbs. timothy hay, forage department	43.40
8- 9	10463	L. H. Kurtz, postmaster, postage................	100.00
8- 9	10464	Wm. Peters, 93 tons 100 lbs. wheat straw; 9 tons 1985 lbs. oat straw, forage department..........	525.20
8- 9	10465	A. Henderson, 23 tons 1450 lbs. wheat straw, forage department	118.63
8- 9	10466	A. Henderson, hauling 40 loads of sand and cutting 12 acres oats on rented ground, 1912...........	20.00
8- 9	10467	H. L. Pike, per diem and mileage, assigning cattle stalls	36.60
8- 9	10468	E. J. Curtin, per diem and mileage, committee work, speed program.........................	31.50
8- 9	10469	O. A. Olson, per diem and mileage, executive committee meeting	27.50
8- 9	10470	Jno. Cree, 18 tons 760 lbs. wheat straw, forage department	91.90
8-11	10471	Jno. A. Burris, civil engineer work, Women and Children's building	44.75
8-11	10472	J. P. Mullen, per diem and mileage, assigning space machinery department	23.70
8-11	10473	Jno. Cutler, boiler for dining hall...............	40.00
8-11	10474	L. H. Kurtz, postmaster, postage Greater Iowa, August 15th	85.00
8-11	10475	J. A. Shovers, second payment, grading contract, Women and Children's building................	352.66
8-11	10476	J. A. Shovers, final payment, grading contract, Women and Children's building...............	694.89
8-12	10477	A. Olson, cleaning swine pens and swine pavilion..	30.00
8-12	10478	C. F. Nolte, advertising Kossuth county, 1913.....	15.00
8-12	10479	H. A. Russell, advertising Appanoose county, 1913.	18.00
8-12	10480	J. W. Richards, advertising Audubon county, 1913..	12.00
8-12	10481	Sol White, advertising Benton county, 1913.......	15.00
8-12	10482	H. J. Long, advertising Bremer county, 1913......	15.00
8-12	10483	J. S. Bassett, advertising Buchanan county, 1913..	20.00
8-12	10484	W. S. Barnhard, advertising Clarke county, 1913...	10.00
8-12	10485	Stevers Posting Service, advertising Crawford county, 1913	15.00
8-12	10486	A. B. Carter, advertising Dallas county, 1913.....	15.00
8-12	10487	J. O. Wishard, advertising Davis county, 1913.....	12.00
8-12	10488	C. B. Williams, advertising Franklin county, 1913.	10.00
8-12	10489	G. M. Rouse, advertising Hamilton county, 1913...	15.00
8-12	10490	O. H. DeGroote, advertising Humboldt county, 1913	15.00
8-12	10491	F. H. Carsten, advertising Iowa county, 1913......	20.00
8-12	10492	F. E. Meredith, advertising Jasper county, 1913....	20.00
8-12	10493	A. E. Labagh, advertising Jefferson county, 1913..	20.00
8-12	10494	Geo. J. Poff, advertising Keokuk county, 1913.....	15.00
8-12	10495	C. C. Ward, advertising Lucas county, 1913.......	15.00
8-12	10496	Chas. Porter, advertising Marion county, 1913.....	15.00
8-12	10497	H. H. Houghton, advertising Marshall county, 1913	15.00
8-12	10498	A. W. R. Boller, advertising Story county, 1913....	20.00
8-12	10499	J. G. Weiting, advertising Tama county, 1913......	15.00
8-12	10500	Carl Shields, advertising Union county, 1913......	15.00
8-12	10501	Wm. H. Black, advertising Webster county, 1913..	15.00

Date	No.	To Whom Issued		Amt.
8-12	10502	M. M. Thompson, advertising Winnebago county, 1913		10.00
8-12	10503	O. W. Whaley, advertising Wright county, 1913		14.00
8-13	10504	O. O. Smith, 2d payment architect fees, Women and Children's building		800.00
8-13	10505	Ferguson Printing Co., misc. printing, 1913		80.60
8-14	10506	R. E. Jones, 124 bu. 27 lbs. oats, forage department		46.19
8-15	10507	R. E. Proudfit, 16 tons 435 lbs. timothy hay, forage department		154.07
8-15	10508	Chas. Erickson, 403¾ bu. oats, forage department		149.39
8-16	10509	Western Union Telegraph Co., freight charges advance to Herbert Kline sideshow attractions		1,012.70
8-16	10510	Pfister and Vogel Leather Co., 1 car spent tan bark		57.15
8-16	10511	C., M. & St. P. Ry. Co., freight one car spent tan bark		89.00
8-16	10512	American Trotting Ass'n, dues 1913		100.00
8-16	10513	Dr. H. L. McRoberts, stallion examination, Cainesville, Iowa		10.00
8-16	10514	Dr. E. O. Smedley, stallion examination, LeMars, Iowa		6.14
8-16	10515	Dr. L. U. Shipley, stallion examination, LeMars, Iowa		6.82
8-16	10516	Dr. A. Holster, stallion examination, LeMars, Iowa		5.00
8-16	10517	Register and Leader Co., subscription Register and Leader 5 months, subscription Register and Leader and Evening Tribune, 7 months		6.70
8-16	10518	C. & N. W. Ry. Co., freight two turnstiles and choppers		4.25
8-16	10519	Western Union Telegraph Co., messages Feb.-June inc.		10.70
8-16	10520	Dr. G. N. Ryan, emergency call, L. D. Bruner		5.00
8-16	10521	East Des Moines Commercial League, 1 year's dues		5.00
8-16	10522	Des Moines Commercial Club, 1 year's dues		15.00
8-16	10523	Brown and Bigelow, 2400 monthly calendar cards		91.10
8-16	10524	American Express Co., express bills March to June, inclusive		5.95
8-16	10525	Adams Express Co., express bills, March to June, inclusive		3.55
8-16	10526	U. S. Express Co., express bills, April, May and June		10.93
8-16	10527	Wells Fargo Express Co., express bills, March to June, inclusive		16.97
8-17	10528	Selover & Knight, funeral expense, L. D. Bruner		99.00
8-17	10529	Webster & Smith, funeral expense, L. D. Bruner		7.00
8-17	10530	Arden Jones, funeral expense, L. D. Bruner		22.50
8-18	10531	C., R. I. & P. Ry. Co., freight, apple sorting machine, horticultural department		9.25
8-18	10532	M. L. Markham, distributing advertising matter		15.00
8-18	10533	L. H. Kurtz, postmaster, postage		25.00
8-19	10534	I. Silkett, painting 112 flag poles, misc. buildings		56.00
8-19	10535	Geo. B. Brown, services, assistance superintendent concessions, 54 days		216.00
8-20	10536	Lloyd Smith, extra clerk secretary's office, 7½ days		22.50
8-20	10537	A. R. Corey, secretary, pay roll folding Greater Iowa, August 1st and 15th:		
		Havel Cox, 1 day @ $1.00	$ 1.00	
		Earl Shannon, 1½ days @ $1.00	1.50	
		Garland Selby, ½ day @ $1.00	.50	
		Charles O'Hearn, 1½ days @ $1.00	1.50	
		Lloyd Shannon, 1½ days @ $1.00	1.50	
		Albert Blake, 1½ days @ $1.00	1.50	
		Harry Deakins, 1 day @ $1.00	1.00	
		Mandel Elman, 9-10 day @ 1.00	.90	
		Victor Andrews, 1 day @ $1.00	1.00	
		Dale Stiles, 9-10 day @ $1.00	.90	
		Chas. Crawford, 1 day @ $1.00	1.00	

Date	No.	To Whom Issued		Amt.
8-20	10537	A. R. Corey, secretary, pay roll folding Greater Iowa, August 1st and 15th—Continued.		
		Martin Peterson, 9-10 day @ $1.00	.90	
		Robert M. Fisher, ½ day @ $1.00	.50	
		Earl Shannon, 1 day @ $1.00	1.00	
		L. J. Tuttle, ½ day @ $1.00	.50	
		Dan Boler, ½ day @ $1.00	.50	
		Richard Spry, ½ day @ $1.00	.50	
		Ruth Ann Spry, ½ day @ $1.00	.50	
		Charles Kirk, ½ day @ $1.00	.50	
		Albert Blake, 19-20 day @ $1.00	.95	
		Lloyd Shannon, 1 day @ $1.00	1.00	19.15
8-20	10538	A. R. Corey, secretary, pay roll No. 16 (grounds), August 3-16, inclusive:		
		Milo Hayes, labor on grounds, 6 days @ $2.00	12.00	
		Chas. Meade, labor on grounds, 10 days @ $3.00	30.00	
		Geo. W. Harlow, labor on grounds, 2 days 5 hrs. @ $2.00	5.00	
		Jno. Thomas, labor on grounds, 4 days @ $2.00	8.00	
		H. P. Stouffer, labor on grounds, 13 days @ $3.00	39.00	
		Walter Hunt, labor on grounds, 12 days @ $3.00	36.00	
		Jas. Beck, labor on grounds, 13 days @ $2.50	32.50	
		Nathan Williams, labor on grounds, 12 days @ $2.50	30.00	
		W. Barnicoat, labor on grounds, 12 days @ $2.50	30.00	
		D. C. King, labor on grounds, 6 days @ $2.50	15.00	
		Dan Faircloth, labor on grounds, 12 days @ $2.50	30.00	
		Ford Van Voorhes, labor on grounds, 13 days @ $2.50	32.50	
		M. Burnett, labor on grounds, 13 days @ $2.00	26.00	
		Harvey Wilton, labor on grounds, 11 days @ $2.00	22.00	
		Albert Spevack, labor on grounds, 13 days @ $2.50	32.50	
		L. C. Reeve, labor on grounds, 13 days @ $2.50	32.50	
		Arthur Dunkin, labor on grounds, 11 days @ $2.50	27.50	
		Wm. Barlow, labor on grounds, 11 days @ $2.00	22.00	
		C. D. Grant, labor on grounds, 13 days @ $3.00	39.00	
		T. W. Davis, labor on grounds, 9 days @ $2.50	22.50	
		Theo Dokoss, labor on grounds, 6 days @ $2.00	12.00	
		Frank Burg, labor on grounds, 12 days @ $2.00	24.00	
		Wm. Barton, labor on grounds, 12 days @ $3.00	36.00	
		Jas. Fredregill, labor on grounds, 12 days 2 hrs. @ $5.00	61.00	
		Kenneth Fredregill, labor on grounds, 13 days @ $1.00	13.00	
		Fodie Burnett, labor on grounds, 11 days 5 hrs. @ $1.00	11.50	
		Geo. Whitney, foreman, 15 days 7 hrs @ $2.75	43.18	
		Erwin Deemer, labor on grounds, 12 days @ $1.50	18.00	

Date	No.	To Whom Issued	Amt.
8-20	10538	A. R. Corey, Secretary, pay roll No. 16 (grounds), August 3-16, inclusive—Continued.	
		R. E. McLaughlin, work on light plant, 116½ hrs. @ 42.7c	49.75
		J. McLennan, labor on light plant, 105½ hrs. @ 39c	41.15
		H. Reynolds, labor on light plant, 116½ hrs. @ 39c	45.44
		T. L. Sewell, labor on light plant, 71½ hrs. @ 39c	27.89
		Ted Woodward, labor on light plant, 12 days 5 hrs. @ $2.00	25.00
		Don Paul, labor on grounds, 13 days @ $2.25	29.25
		Chas. Johnson, labor on grounds, 7 days @ $2.50	17.50
		Iver Grylls, labor on grounds, 13 days @ $2.50	32.50
		Wm. Robinson, labor on grounds, 13 days 3 hrs. @ $2.25	29.93
		Chas. Daughenbaugh, labor on grounds, 13 days 3 hrs. @ $2.00	26.60
		Henry Grandgeorge, labor on grounds, 13 days @ $2.50	32.50
		Leo Paul, labor on grounds, 13 days @ $2.00	26.00
		C. E. Johnson, labor on grounds, 1 day @ $2.00	2.00
		Alley McBurney, labor on grounds, 1 day @ $2.00	2.00
		Geo. Mizner, labor on grounds, 13 days @ $2.00	26.00
		Jno. Wright, labor on grounds, 12 days @ $2.00	24.00
		Isadore Stone, labor on grounds, 7 days @ $1.50	10.50
		Darrell Kinney, labor on grounds, 11 days @ $1.50	16.50
		Geo. Ryan, labor on grounds, 7 days @ $2.00	14.00
		L. M. Randles, labor on grounds, 10 days @ $2.00	20.00
		Geo. Teas, labor on grounds, ½ day @ 1.00	.50
		Fred Gutshall, labor on grounds, 7 days @ $2.00	14.00
		Jno. Kalny, labor on grounds, 13 days @ $2.00	26.00
		Wm. Waller, labor on grounds, 12 days @ $2.00	24.00
		H. F. Deetz, labor on grounds, 10 days @ $3.00	30.00
		Bert Meadows, labor on grounds, 2 days @ $2.00	4.00
		T. F. Brennan, labor on grounds, 2 days @ $2.00	4.00
		Geo. Hilkinoss, labor on grounds, 1 day 4 hrs. @ $2.00	2.80
		Frank Maricle, labor on grounds, 2 days @ $2.00	4.00
		Wm. Williams, labor on grounds, 2 days @ $2.00	4.00
		Bert Kirkman, labor on grounds, 4 days @ $2.00	8.00
		W. R. Wilkins, labor on grounds, 5 days @ $2.00	10.00
		Joe Scofield, labor on grounds, 5 days @ $2.00	10.00
		M. Bemisdorfer, labor on grounds, 1 day 6 hrs @ $2.00	3.20
		Frank Anderson, labor on grounds, 5 days 5 hrs. @ $2.00	11.00
		Jno. Jeffries, labor on grounds, 2 days 5 hrs. @ $2.00	5.00
		H. J. Holden, labor on grounds, 3 days 5 hrs.	

Date	No.	To Whom Issued		Amt.
8-20	10538	A. R. Corey, Secretary, pay roll No. 16 (grounds), August 3-16, inclusive—Continued.		
		@ $2.00	7.00	
		G. J. Massick, labor on grounds, ½ day @ $2.00	1.00	
		Geo. F. Hunt, labor on grounds, 10 days @ $2.00	20.00	
		Dallas Price, labor on grounds, 8 days @ $2.00	16.00	
		E. Riedel, labor on grounds, 3 days @ $2.00	6.00	
		Felix Gutshall, labor on grounds, 2 days @ $1.00	2.00	
		Leonard Wilshon, labor on grounds, 2 days @ $1.00	2.00	
		Jno. Ellingston, labor on grounds, 4 days @ $2.00	8.00	
		J. H. Revell, labor on grounds, 1 day @ $2.00	2.00	
		Ray Curray, labor on grounds, 1 day @ $2.00	2.00	
		Fred Smith, labor on grounds, 10 days @ $2.00	20.00	
		Andy Johnson, labor on grounds, 10 days @ $2.00	20.00	
		Lew Erwin, labor on grounds, ½ day @ $2.00	1.00	
		French Patton, labor on grounds, 12 days @ $2.00	24.00	
		R. Weeks, labor on grounds 1½ days @ $2.00	3.00	
		Don Koontz, labor on grounds, 3 days @ $1.75	5.25	
		Emory Wright, labor on grounds, 11 days @ $2.00	22.00	
		Dave Wright, labor on grounds, 12 days 5 hrs. @ $2.00	25.00	
		I. J. Whitmer, labor on grounds, 12 days @ $2.00	24.00	
		W. H. Anderson, labor on grounds, 9 days @ $2.00	18.00	
		Geo. Whitmer, labor on grounds, 13½ days @ $2.00	27.00	
		Theo Broerman, labor on grounds, 11 days 2 hrs. @ $1.75	19.60	
		Harry Tschontz, labor on grounds, 13 days @ $2.00	26.00	
		John Olson, labor on grounds, 13 days @ $2.00	26.00	
		Jno. Pinkiney, labor on grounds, 1 day @ $2.00	2.00	
		Carl Heggen, labor on grounds, 13 days 4 hours at $3.00	40.20	
		Chas. Morrison, labor on grounds, 13 days @ $3.50	45.50	
		Chas. Morrison, labor on grounds, 12 days 5 hrs. @ $4.00	50.00	
		A. W. Shaw, labor on grounds, 6 days @ $4.00	24.00	
		I. B. Brown, labor on grounds, 12 days @ $4.00	48.00	
		I. B. Brown, labor on grounds, 11 days @ $4.00	44.00	
		Jno. Brown, labor on grounds, 12 days 5 hrs. @ $4.00	50.00	
		Orie Iseminger, labor on grounds, 7 days @ $4.00	28.00	
		Wm. Hearshman, labor on grounds, 7 days @ $4.00	28.00	
		Harley Thornton, labor on grounds, 3 days @ $4.00	12.00	
		Merlin Morrison, labor on grounds, 6 days @ $4.00	24.00	
		Hoyt Woodward, labor on grounds, 6 days @ $4.00	24.00	

Date	No.	To Whom Issued		Amt.
8-20	10538	A. R. Corey, Secretary, pay roll No. 16 (grounds), August 3-16, inclusive—Continued.		
		Harry Rogers, labor on grounds, 9 days @ $3.00	27.00	
		Albert Groom, labor on grounds, 9 days 4 hours @ $2.25	21.34	
		M. H. Clark, labor on grounds, 3 days 5 hours @ $2.00	7.00	
		G. W. Milbourn, labor on grounds, 10 days @ $2.00	20.00	
		T. H. Milbourn, labor on grounds, 13 days @ $2.00	26.00	
		Chas. Welton, labor on grounds, 6 days @ $4.00	24.00	2,273.60
8-20	10539	C. E. Cameron, per diem and mileage Executive Committee meeting		30.00
8-20	10540	S. E. Thornton, 10 tons and 10 pounds hay, forage department		90.05
8-20	10541	G. S. Gilbertson, treasurer, 200 general admission tickets, advertising exchange, Register and Leader.		100.00
8-20	10542	G. S. Gilbertson, treasurer, 168 general admission tickets, etc., advertising exchange, Daily News		84.00
8-20	10543	G. S. Gilbertson, treasurer, 80 general admission tickets, 5 exhibitor's tickets, advertising exchange with Successful Farming		50.00
8-20	10544	G. S. Gilbertson, treasurer, 100 general admissions, 3 exhibitor's tickets, advertising exchange, Des Moines Capital		56.00
8-21	10545	E. J. Curtin, expense attending Peoria race meeting on account soliciting speed entries		38.60
8-21	10546	O. A. Olson, freight on horses and buggies from Forest City to Des Moines, account of admissions department		24.20
8-21	10547	Capital City Plumbing Company, first estimate plumbing contract, new horse barn		1,200.00
8-22	10548	Max Lillie, first payment 1913 aeroplane contract		250.00
8-23	10549	Martha Coffin, salary extra clerk, 12 days, July, 1913		30.00
8-23	10550	A. Liberati, first payment 1913 band contract		700.00
8-23	10551	F. M. Barnes, Inc., first payment 1913 attraction contract		1,500.00
8-25	10552	Pain's Fireworks Display Co., first payment 1913 fireworks contract		2,500.00
8-25	10553	Philharmonic Choir, 1913 attraction contract		525.00
8-25	10554	A. Liberati, second payment 1913 band contract		500.00
8-25	10555	Al. Thomas, charges on wagon used in team race		15.00
8-25	10556	W. Phillips, 7 tons 1330 lbs. hay, forage dept		72.82
8-25	10557	J. W. Patrick, 125 bushels oats, forage dept.		46.25
8-26	10558	W. G. Phillips, 94 3-8 bushels oats, forage dept.		38.75
8-26	10559	J. E. Webb, judging wool breeds, sheep department		80.00
8-26	10560	Jno. Campbell, judging mutton breeds, sheep dept.		109.25
8-26	10561	J. S. Peters, 98 1-8 bu. oats, forage dept.		39.25
8-26	10562	G. P. Klein, 87 1-2 bu. oats, forage department		35.00
8-27	10563	Corn Publishing Co., display advertising, 1913		25.00
8-27	10564	Pain Fireworks Display Co., second payment 1913 fireworks contract		2,500.00
8-27	10565	Max Lillie, second payment 1913 aeroplane contract		500.00
8-27	10566	F. M. Barnes, Inc., final payment 1913 attraction contract		2,075.00
8-28	10567	O. A. Olson, freight on horses and buggies from Des Moines to Forest City, Adm. dept.		24.60
8-28	10568	Earl W. Eves, advertising Muscatine county, 1913		20.00

Date	No.	To Whom Issued	Amt.
8-28	10569	E. F. Ferrin, expense account boys' judging contest 1913	46.30
8-28	10570	Pain Fireworks Display Co., third payment 1913 fireworks contract	1,500.00
8-28	10571	Max Little, final payment 1913 aeroplane contract	50.00
8-28	10572	Madrid Concert Band, full payment 1913 band concert	480.00
8-28	10573	A. Liberati, final payment 1913 band contract	1,250.00
8-28	10574	Fischer's Burlington Band, full payment 1913 band contract	1,050.00
8-28	10575	W. F. Carver, full payment 1913 attraction contract	1,000.00
8-28	10576	T. Fred Henry, full payment 1913 band contract	1,550.00
8-28	10577	Dan Davis, special detective 1913 fair	78.30
8-28	10578	M. W. Criplivер, property man, 1913 fair	43.80
8-28	10579	Jeff Duree, property man, 1913 fair	43.80
8-28	10580	Pain Fireworks Display Co., final payment 1913 fireworks contract	1,000.00
8-29	10581	A. P. McAnalty, 15 days asst. supt. grounds	60.00
8-29	10582	Ira Daniels, 186 bu. 13 lbs. oats forage dept.	68.97
8-29	10583	C. E. Cameron, per diem and mileage, board meeting	98.00
8-29	10584	O. A. Olson, per diem and mileage, board meeting	99.50
8-29	10585	R. S. Johnson, per diem and mileage, board meeting	99.80
8-29	10586	C. W. Phillips, per diem and mileage, board meeting	105.00
8-29	10587	E. M. Reeves, per diem and mileage, board meeting	96.30
8-29	10588	E. J. Curtin, per diem and mileage, board meeting	111.50
8-29	10589	E. M. Wentworth, per diem and mileage, board meeting	106.00
8-29	10590	T. C. Legoe, per diem and mileage, board meeting	92.50
8-29	10591	Chas. F. Curtiss, per diem and mileage, board meeting	87.70
8-29	10592	F. E. Sheldon, per diem and mileage, board meeting	96.30
8-29	10593	J. F. Summers, per diem and mileage, board meeting	140.00
8-29	10594	J. P. Mullen, per diem and mileage, board meeting	95.70
8-29	10595	H. L. Pike, per diem and mileage, board meeting	104.60
8-29	10596	A. R. Corey, allowance for board, 1913 fair	25.00
8-29	10597	G. S. Gilbertson, allowance for board, 1913 fair	25.00
8-29	10598	Geo. A. Heyl, 1913 attraction contract, 6-pony team	100.00
8-29	10599	W. S. Bradley, firing administration bldg. boiler 14 days	28.00
8-29	10600	Geo. Brown, 7 meals for carpenters working on temporary horse barn	3.50
8-29	10601	Hoyt Woodward, rent horse and buggy, 9 days, ticket auditing department	22.50
8-29	10602	G. S. Gilbertson, treasurer, 50 general admission tickets, exchange advertising Des Moines Daily News; 47 general admission tickets for boys' judging contest	48.50
8-29	10603	Club Dining Hall, State Day banquet expense	144.75
8-29	10604	Cressey & Wingate, contract for building decorations, 1913 fair	600.00
8-30	10605	Potts Bros. fifth estimate cement work contract	2,000.00
8-30	10606	Spirit of the West, advertising speed program, 1913	72.50
8-30	10607	The Iowa Farmer, display advertising, 1913	200.00
8-30	10608	C. P. Graham, full payment orchestra contract, 1913	412.50
8-30	10609	A. Olson, cleaning ampitheater 7 nights, 1913	122.50
8-30	10610	A. R. Corey, salary, August, 1913	183.33
8-30	10611	H. N. Whitney, salary, August, 1913	166.66
8-30	10612	C. A. Nash, salary, August, 1913	125.00
8-30	10613	Elsie Colton, salary, August, 1913	100.00
8-30	10614	J. H. Deemer, salary, August, 1913	100.00
8-30	10615	Edith K. Smith, salary, August, 1913	85.00
8-30	10616	Minnie Truax, salary, August, 1913	75.00
8-30	10617	Ben Murrow, 33 tons 1445 lbs. hay, forage dept.	315.41
8-30	10618	W. E. Tropple, 19 tons 1465 lbs. straw, forage dept.	98.66
8-30	10619	L. Gibson, garbage contract, 1913 fair	175.00
8-30	10620	Mrs. L. B. Sims, washing dishes, plates and vases, agricultural bldg., 1913 fair	6.50

Date	No.	To Whom Issued		Amt.
9- 3	10621	A. R. Corey, Secretary, pay roll No. 17 (grounds), August 17-30, inclusive:		
		Harry Rogers, labor on grounds, 5½ days @ $3.00	$ 16.50	
		Geo. F. Hunt, labor on grounds, 1 day 9 hours @ $2.00	3.80	
		J. H. Pevell, labor on grounds, 5 days 9 hours @ $2.00	11.80	
		Wm. Barlow, labor on grounds, 9 days at $2.00	18.00	
		W. Barnicoat, labor on grounds, 9 days @ $2.50	22.50	
		Albert Spevack, labor on grounds, 10 days @ $2.50	25.00	
		A. Dunkin, labor on grounds, 8 days @ $2.50	20.00	
		Chas. Johnson, labor on grounds, 9 days @ $2.50	22.50	
		Frank Maricle, labor on grounds, 8 days 9 hours @ $2.00	17.80	
		Wm. Williams, labor on grounds, 8 days 9 hours @ $2.00	17.80	
		Frank Anderson, labor on grounds, 8 days 9 hours @ $2.00	17.80	
		Jno. Brown, labor on grounds, 8 days 9 hours @ $4.00	35.60	
		Wm. Hearshman, labor on grounds, 7 days 9 hours @ $4.00	31.60	
		E. C. Loman, labor on grounds, 6 days @ $4.00	24.00	
		Ed Burdette, labor on grounds, 7 days at $2.00	14.00	
		A. Adams, labor on grounds, 7 days @ $2.00	14.00	
		Harry Rogers, labor on grounds, ½ day @ $3.00	1.50	
		Chas. Dickinson, labor on grounds, 8½ days @ $2.00	17.00	
		Geo. Ryan, labor on grounds, 11 days 4 hours @ $2.00	22.80	
		Joe Scofield, labor on grounds, 13 days 4 hours @ $2.00	26.80	
		C. G. Grant, labor on grounds, 14 days @ $3.00	42.00	
		J. McLennan, electrician, 202 hours @ 39c	78.78	
		T. L. Sewell, electrician, 211 hours @ 39c	82.29	
		Wm. Gardner, electrician, 189½ hours @ 39c	73.91	
		R. E. McLaughlin, electrician, 205 hours @ 42.7c	87.53	
		H. Reynolds, electrician, 196 hours @39c	76.44	
		Ted Woodward, electrician, 182 hours @ 20c	36.40	
		H. P. Stouffer, labor on grounds, 15 days @ $3.00	45.00	
		Walter Hunt, labor on grounds, 4½ days @ $3	13.50	
		Jas. Beck, labor on grounds, 15 days @ $2.50	37.50	
		Nathan Williams, labor on grounds, 14 days @ $2.50	35.00	
		D. C. King, labor on grounds, 6½ days @ $2.50	16.25	
		Dan Faircloth, labor on grounds, 14 days @ @ $2.50	35.00	
		Ford Von Voorhes, labor on grounds, 15 days @ $2.50	37.50	
		M. Burnette, labor on grounds, 13 days @ $2.00	26.00	
		Harvey Wilton, labor on grounds, 14 days @ $2	28.00	
		L. C. Reeve, labor on grounds, 13 days @ $2.50	32.50	
		Frank Berg, labor on grounds, 14 days @ $2.00	28.00	
		Wm. Barton, labor on grounds, 15 days @ $3.00	45.00	
		Jas. Fredrigill, labor on grounds, 1 day @ $5.00	5.00	
		Kenneth Fredrigill, labor on grounds, 5 days @ $1.00	$5.00	
		Fodie Burnett, labor on grounds, 5 days @ $1.00	5.00	

Date	No.	To Whom Issued	Amt.
9- 3	10621	A. R. Corey, Secretary, pay roll No. 17 (grounds), August 17-30, inclusive—Continued.	
		Erwin Deemer, labor on grounds, 14 days @ $1.50	21.00
		Geo. Whitmer, electrician, 157 hours @ 20c	31.40
		Don Paul, labor on grounds, 13 days 9 hours @ $2.00	27.80
		Ivor Grylls, labor on grounds, 1 day 9 hours @ $2.50	4.75
		Wm. Robinson, electrician, 174 hours @ 26c	45.24
		Chas. Daughenbaugh, electrician, 176 hours @ 20c	35.20
		Henry Grandgeorge, labor on grounds, 14 days @ $2.50	35.00
		Leo Paul, labor on grounds, 14 days @ $2.00	28.00
		Geo. Mizner, labor on grounds, 13 days 9 hours @ $2.00	27.80
		Jno. Wright, labor on grounds, 13 days 4 hours @ $2.00	26.80
		Darrel Kinney, labor on grounds, 12 days 4 hours @ $1.50	18.60
		L. M. Randles, labor on grounds, 4 days 4 hours @ $2.00	8.80
		Jno. Kalny, labor on grounds, 13 days 9 hours @ $2.00	27.80
		Wm. Waller, labor on grounds, 1 day 4 hours @ $2.00	2.80
		Bert Kirkman, labor on grounds, 13 days 9 hours @ $2.00	27.80
		W. R. Wilkins, labor on grounds, 12 days 9 hours @ $2.00	25.80
		G. W. Milbourn, labor on grounds, 13 days 9 hours @ $2.00	27.80
		Felix Gutshall, labor on grounds, 13 days @ $1.00	13.00
		Leonard Wilshon, labor on ground, 3 days 4 hours @ $1.00	3.40
		Ray Curry, labor on grounds, 1 day @ $2.00	2.00
		Andy Johnson, labor on grounds, 4 days @ $2.00	8.00
		French Payton, labor on grounds, 14 days 9 hours @ $2.00	29.80
		T. H. Milbourn, labor on grounds, 1 day 9 hours @ $2.00	3.80
		Emory Wright, labor on grounds, 10 days 9 hours @ $2.00	21.80
		Dave Wright, labor on grounds, 14 days @ $2.00	28.00
		I. J. Whitmer, labor on grounds, 13 days 9 hours @ $2.00	27.80
		W. H. Anderson, labor on grounds, 12 days 9 hours @ $2.00	25.80
		Theo Broerman, labor on grounds, 13 days 9 hours @ $1.75	24.33
		Harry Tschontz, labor on grounds, 4 days 9 hours @ $2.00	9.80
		Jno. Olson, labor on grounds, 13 days 9 hours @ $2.00	27.80
		Gray Ashby, labor on grounds, 8 days @ $2.00	16.00
		T. W. Davis, labor on grounds, 9 days @ $2.83	25.50
		Carl Heggen, labor on grounds, 13 days 9 hours @ $3.00	41.70
		Chas. Morrison, labor on grounds, 1 day @ $4.00	4.00

Date	No.	To Whom Issued		Amt.
9-3	10621	A. R. Corey, Secretary, pay roll No. 17 (grounds), August 17-30, inclusive—Continued.		
		Chas. Morrison, labor on grounds, 1 day @ $3.50	3.50	
		I. B. Brown, labor on grounds, 13 days 9 hours @ $4.00	55.60	
		I. B. Brown, labor on grounds, 1 day @ $4.00	4.00	
		Orie Iseminger, labor on grounds, 13 days @ $4.00	52.00	
		Harley Thornton, labor on grounds, 13 days @ $4.00	52.00	
		Merlin Morrison, labor on grounds, 1 day @ $4.00	4.00	
		Chas. Wilton, labor on grounds, 13 days 9 hours @ $4.00	55.60	
		Hoyt Woodward, labor on grounds, 13 days 9 hours @ $4.00	55.60	
		Fred Myers, labor on grounds, 12 days 9 hours @ $4.00	51.60	
		Wm. Peters, labor on grounds, 10 days 7 hours @ $4.00	42.80	
		Roy Warren, labor on grounds, 6 days 8 hours @ $4.00	27.20	
		Joe Moyer, labor on grounds, 10 days @ $4.00	40.00	
		Joe Moyer, labor on grounds, 9 days 5 hours @ $4.00	38.00	
		Albert Groom, labor on grounds, 15 days 4 hours @ $2.25	34.65	
		Frank Maricle, labor on grounds, 4 days @ $2.00	8.00	
		Wm. Williams, labor on grounds, 4 days @ $2.00	8.00	
		Hoyt Woodward, labor on grounds, 13 days @ $2.00	26.00	
		Geo. Whitney, foreman, 14 days @ $3.75	52.50	
		H. F. Deets, foreman, 14 days @ $3.75	52.50	
		L. F. French, labor on grounds, 6 days @ $2.00	12.00	
		W. Branch, labor on grounds, 8 days @ $2.00	16.00	
		Ben Elmore, labor on grounds, 10½ days @ $2.00	21.00	
		Jno. Early, labor on grounds, 10½ days @ $2.00	21.00	
		Henry Hines, labor on grounds, 10 days @ $2.00	20.00	
		Wm. Moody, labor on grounds, 9 days @ $2.00	18.00	
		F. Moppin, labor on grounds, 8 days @ $2.00	16.00	
		Wm. Charity, labor on grounds, 8 days @ $2.00	16.00	
		Roscoe Harrison, labor on grounds, 8 days @ $2.00	16.00	
		W. Humburd, labor on grounds, 7 days @ $2.00	14.00	
		V. Simmons, labor on grounds, 7 days @ $2.00	14.00	
		Ed Moppin, labor on grounds, 7 days @ $2.00	14.00	
		Oscar Moppin, labor on grounds, 7 days @ $2.00	14.00	
		Thos. Jackson, labor on grounds, 6 days @ $2.00	12.00	
		Jas. Migits, labor on grounds, 5 days @ $2.00	10.00	
		Jane Taylor, labor on ground, 1 day @ $1.50	1.50	
		Mrs. Biggs, labor on grounds, 9 days @ $1.50	13.50	
		Kathryn Miece, labor on grounds, 9 days @ $1.50	13.50	
		Mrs. E. Dickinson, labor on grounds, 9 days @ $1.75	15.75	
		Susie Berger, labor on grounds, 9 days @ $1.50	13.50	
		Sarah Pratt, labor on grounds, 8 days @ $1.50	12.00	
		Pearl Perry, labor on grounds, 8 days @ $1.50	12.00	
		Mrs. V. Simmons, labor on grounds, 7 days @ $1.50	10.50	
		Mrs. Jeffries, labor on grounds, 7 days @ $1.50	10.50	
		Clara Tait, labor on grounds, 7 days @ $1.50	10.50	
		Geo. Cleggett, labor on grounds, 9 days @ $2.00	18.00	

Date	No.	To Whom Issued		Amt.
9- 3	10621	A. R. Corey, Secretary, pay roll No. 17 (grounds), August 17-30, inclusive—Continued.		
		Chas. Monroe, labor on grounds, 8 days @ $2.00	16.00	
		Dave Langford, labor on grounds, 7 days @ $2.00	14.00	
		S. Rogers, labor on grounds, 7 days @ $2.00..	14.00	
		Chas. Small, labor on grounds, 6 days @ $2.00	12.00	
		W. F. Cole, labor on grounds, 7 days @ $2.00	14.00	
		J. T. Berger, labor on grounds, 5 days @ $2.00	10.00	
		Mrs. F. Walker, labor on grounds, 9 days @ $1.50	13.50	
		Martha Grimes, labor on grounds, 9 days @ $1.50	13.50	
		Vina Rogers, labor on grounds, 8 days @ $1.50	12.00	
		Marie Cooper, labor on grounds, 7 days @ $1.50	10.50	
		Hattie Allen, labor on grounds, 6 days @ $1.50	9.00	
		Eliza Hill, labor on grounds, 6 days @ $1.50..	9.00	
		Jane Stanton, labor on grounds, 7 days @ $1.50	10.50	
		Helen Williams, labor on grounds, 5 days @ $1.50	7.50	
		Lon Elmore, labor on grounds, 10 days 5 hours @ $2.50	26.25	
		Susie Sims, labor on grounds, 5 days @ $1.50	7.50	
		A. Monroe, labor on grounds, 10 days 5 hours @ $2.25	23.63	3,239.00
9- 3	10622	A. R. Corey, Secretary, railroad fare for boys at Boys' Encampment:		
		Chas. F. Ashby	$ 1.92	
		Walter E. Anderson	2.50	
		Linfred Ahart	5.52	
		Joseph Bryson	5.08	
		Chas. Besh	4.84	
		Ray Buchanan	2.86	
		Lawrence Boyer	4.72	
		Francis B. Brocksus	3.64	
		Burdette Brown	7.26	
		Raymond Barton	7.52	
		Fred Berger	4.60	
		Walter E. Bice	6.68	
		Robert Buhmann	7.96	
		Hoyt V. Buttolph	6.88	
		Grant Clark	3.72	
		Jno. Casey	1.40	
		Paul C. Clark	5.24	
		David Carlson	8.76	
		Wendell Clampitt	3.08	
		Percy C. Cozine	4.84	
		Dewey M. Cable	4.24	
		Claude Downer	7.58	
		Henry Dodd	5.92	
		Lacey Darnell	2.88	
		Manly Dawson	5.76	
		Andy Doebel	5.24	
		Arden Edmondson	4.08	
		Vivian Edwards	5.34	
		Benj. Eastly	.48	
		Vincent Field	5.96	
		Eugene Farrell	7.00	
		Ivan Fuller	3.60	
		Eugene Gore	2.76	
		Vernon Guthrie	1.40	
		Chas. H. Graham	2.40	

Date	No.	To Whom Issued		Amt.
9- 3	10622	A. R. Corey, Secretary, railroad fare for boys at Boys' Encampment—Continued.		
		Gerald Greenfield	.88	
		Verner Grau	5.96	
		Oscar Hansen	4.16	
		Horace Arthur	5.40	
		Harland J. Hillman	3.16	
		Arthur Herring	4.88	
		Willard Hadley	1.20	
		Russell Henline	4.24	
		Amos Hansen	4.20	
		Fred Jordan	7.38	
		Fred S. Johnston	3.20	
		Sam Krebill	6.64	
		Rex Klingensmith	2.36	
		Fay Knapp	9.58	
		Merwin Kelley	9.82	
		Dale Lentz	1.20	
		Donald M. Lewis	4.48	
		Jno. Loughridge	3.18	
		Frank D. Law	3.64	
		Richard D. McCulloch	5.00	
		J. Hartley Milroy	6.55	
		Paul Mitchell	3.52	
		Rupert F. Meisgeier	5.32	
		Herbert Martin	7.10	
		Fred Mleynek	1.96	
		Clement Miller	4.68	
		Floyd Nordman	3.44	
		Leo W. Neumeyer	4.70	
		Byron B. Norris	2.96	
		Arthur S. Nelson	1.35	
		Edward G. Neal	3.96	
		Paul Phelps	6.80	
		Ernest Parks	4.80	
		Arthur Pugh	2.36	
		Otto Ramberg	7.88	
		Glen Rouse	4.60	
		Floyd B. Sharp	6.26	
		Roy H. Searle	9.34	
		Ralph Smalley	6.92	
		Perry Stow	5.20	
		W. Donald Steele	3.00	
		Chas. P. Steck	4.00	
		Joe Samuelson	6.04	
		David Scrafield	6.30	
		George Springer	3.48	
		Warner Smith	6.02	
		Glen Thomas	5.52	
		David R. Tarrant	6.00	
		Arthur W. Thompkins	7.52	
		Leroy Tompkins	5.68	
		Harvey A. Tiffany	7.64	
		Raymond Wolfe	7.58	
		Jno. Webb	4.32	
		Sanford Wallace	4.56	
		Clair Welsh	5.40	
		August Wessels	3.68	
		Robert Watts	6.04	
		Karl Whitaker	4.68	
		Gordon Williams	8.50	
		Oscar Williams	7.10	
		Russell Wright	4.96	
		Raymond Wilson	5.74	477.74

Date	No.	To Whom Issued		Amt.
9- 3	10623	A. R. Corey, Secretary, pay roll, assistants, Boys' Camp:		
		Fred M. Hansen, Superintendent, 8 days with board @ $3.50; 2 days without board @ $4.50	$ 37.00	
		Prof. H. L. Eells, 8 days with board	20.00	
		Prof. H. C. Moeller, 8 days with board	20.00	
		Marvin Wilson, 8 days with board	20.00	
		C. C. Welsh, 8 days with board	20.00	
		Chas. Fleenor, 8 days with board	20.00	
		Prof. W. R. Raymond, 8 days with board	20.00	
		J. H. Abernathy, 4 days with board	10.00	167.00
9- 3	10624	A. R. Corey, Secretary, pay roll, Publicity Dept., August 22-28, inclusive:		
		Herbert Kline, 6 days reporting awards @ $2.75	16.50	
		G. H. Winnan, 6 days reporting awards @ $2.75	16.50	
		Philip Waters, 6 days reporting awards @ $2.75	16.50	
		Nelson Goodsell, 6 days reporting awards @ $2.75	16.50	
		Isabel Watts, 3½ days stenographic work @ $2.75	9.65	
		Minnie Truax, extra services, 15 days @ $1.50	22.50	98.15
9- 3	10625	A. R. Corey, Secretary, pay roll, forage department:		
		Geo. A. Wilson, supt. forage, 16 days @ $5.00	$ 80.00	
		W. T. Willey, asst. supt. forage, 11 days @ $3.50	38.50	
		Joe Geisman, asst. supt. forage, 12 days @ $3.50	42.00	
		J. J. Wilson, asst. supt. forage, 12 days @ $3.50	42.00	
		Will Keeling and team, 12 days @ $5.00	60.00	
		Chas. Morrison and team, 12 days @ $5.00	60.00	
		Merlin Morrison and team, 12 days @ $5.00	60.00	
		Lawrence Peters, helper, 12 days @ $3.00	36.00	
		Willie Peters, helper, 12 days @ $3.00	36.00	
		Ora Hicks, helper, 12 days @ $3.00	36.00	
		Orville Ellis, helper, 12 days @$3.00	36.00	526.50
9- 3	10626	A. R. Corey, Secretary, pay roll Secretary's office, August 1-August 30, inclusive:		
		Bessie Sawtelle, grounds office, 4 days @ $3.00	$ 12.00	
		Volney Diltz, putting out large daily programs 2 days @ $3.00	6.00	
		H. L. Shearer, putting out band concert programs	3.50	
		Clifford C. Heer, city office, 10 days @ $4.00	40.00	
		Geo. K. Scott, city office, 14 days @ $3.00	42.00	
		Geo. K. Scott, grounds office, 15 days @ $4.50	67.50	
		A. S. Marquis, city office, 1½ days @ $3.00	4.50	
		A. S. Marquis, grounds office, 15 days @ $4.50	67.50	
		Mrs. E. W. Stone, city office, 13 days @ $2.50	32.50	
		Mrs. E. W. Stone, grounds office, 12 days @ $4.00	48.00	

Date	No.	To Whom Issued		Amt.
9- 3	10626	A. R. Corey, Secretary, pay roll Secretary's office, August 1-August 30, inclusive—Continued.		
		Jeanette Williams, city office, 13 days @ $2.00	26.00	
		Jeanette Williams, grounds office, 14 days @ $3.00	42.00	
		Perry Ridenour, city office, 13 days @ $1.25	16.25	
		Perry Ridenour, grounds office, 14 days @ $2.25	31.50	
		Urban Portel, city office, 13 days @ $1.00	13.00	
		Urban Portel, grounds office, 14 days @ $2.00	28.00	
		Roger Williams, grounds office, 9 days @ $1.00	9.00	
		Edith K. Smith, grounds office, 15 days @ $1.50	22.50	
		Elsie Colton, grounds office, 15 days @ $1.50	22.50	
		C. A. Nash, grounds office, 15 days @ $1.50	22.50	556.75
9- 3	10627	E. M. Wentworth, pay roll Department Public Safety and Transportation, August 4-September 1, inclusive:		
		Thomas Witmer, patrolman, 16 days @ $2.50	$ 40.00	
		W. S. Goodings, 9 days captain @ $3.50; 10 days footman @ $2.50	56.50	
		P. M. Jenks, patrolman, 25 days @ $2.50	62.50	
		J. W. Denny, 7 days captain @ $3.50; 11 days footman @ $2.50	52.00	
		O. A. McKinney, 9 days captain @ $3.50, 10 days patrolman at $2.50	56.50	
		C. F. Anspach, patrolman, 2 days @ $2.50	5.00	
		G. O. Stemsell, 9 days captain @ $3.50, 2 days footman @ $2.50	36.50	
		W. C. Melthorpe, special plain clothes man	35.45	
		F. F. Randolph, patrolman, 12 days @ $2.50	30.00	
		Harry Roberts, patrolman, 10 days @ $2.50	25.00	
		O. B. McKinney, patrolman, 11 days @ $2.50	27.50	
		Jos. K. Zawadzki, patrolman, 11 days @ $2.50	27.50	
		Jesup Stephens, patrolman, 3 days @ $2.50	7.50	
		J. B. Norris, patrolman, 9 days @ $2.50	22.50	
		Geo. B. Walker, patrolman, 8 days @ $2.50	20.00	
		G. P. Scovill, patrolman, 9 days @ $2.50	22.50	
		W. C. Brown, patrolman, 8 days @ $2.50	20.00	
		F. M. Gardner, patrolman, 8 days @ $2.50	20.00	
		H. L. Van Nostrand, patrolman, 8 days @ $2.50	20.00	
		C. A. Roberts, patrolman, 4 days @ $2.50	10.00	
		H. Rutledge, patrolman, 9 days @ $2.50	22.50	
		A. C. Green, patrolman, 4 days @ $2.50	10.00	
		Jos. Schock, patrolman, 11 days @ $2.50	27.50	
		B. H. Kenworthy, patrolman, 7 days @ $2.50	17.50	
		B. H. Cave, patrolman, 9 days @ $2.50	22.50	
		M. W. Beights, patrolman, 9 days @ $2.50	22.50	
		O. A. Mullen, patrolman, 10 days @ $2.50	25.00	
		E. R. Doan, patrolman, 9 days @ $2.50	22.50	
		R. E. Morgan, patrolman, 11 days @ $2.50	27.50	
		O. Landy, patrolman, 10 days @ $2.50	25.00	
		C. G. Sears, patrolman, 10 days @ $2.50	25.00	
		Ed Ellis, patrolman, 10 days @ $2.50	25.00	
		Robt. Neal, patrolman, 9 days @ $2.50	22.50	
		Amos Martin, patrolman, 9 days @ $2.50	22.50	
		Frank Leonard, patrolman, 9 days @ $2.50	22.50	
		Dan Stamen, patrolman, 9 days @ $2.50	22.50	
		P. J. Rowe, patrolman, 9 days @ $2.50	22.50	
		Chas. Zwanzier, patrolman, 7 days @ $2.50	17.50	

Date	No.	To Whom Issued	Amt.
9- 3	10627	E. M. Wentworth, pay roll Department Public Safety and Transportation, August 4-September 1, inclusive—Continued.	
		L. E. Hall, patrolman, 10 days @ $2.50	25.00
		R. W. Roberts, 9 days captain @ $3.50; 3 days footman @ $2.50	38.00
		J. G. Weiting, patrolman, 10 days @ $2.50	25.00
		J. H. Cremer, 7 days captain @ $3.50, 3 days footman @ $2.50	32.00
		J. B. Shuey, patrolman, 9 days @ $2.50	22.50
		E. A. Schall, patrolman, 9 days @ $2.50	22.50
		R. E. Dunahoo, patrolman, 9 days @ $2.50	22.50
		Dick Bye, patrolman, 8 days @ $2.50	20.00
		A. E. Metzger, patrolman, 8 days @ $2.50	20.00
		R. C. Lillibridge, patrolman, 8 days @ $2.50	20.00
		James Allen, patrolman, 8 days @ $2.50	20.00
		P. Morrissey, captain, west gate, 9 days @ $2.50	31.50
		Ray Scott. patrolman, 7 days @ $2.50	17.50
		R. C. Brown, patrolman, 8 days @ $2.50	20.00
		Chas. J. Hall, patrolman, 6 days @ $2.50	15.00
		J. J. Walker, patrolman, 7 days @ $2.50	17.50
		J. A. Dibel, patrolman, 8 days @ $2.50	20.00
		F. Wertinberger, patrolman, 8 days @ $2.50	20.00
		Sam Garber, patrolman, 7 days @ $2.50	17.50
		H. W. Kempton, patrolman, 9 days @ $2.50	22.50
		Chas. Stebbins, patrolman. 8 days @ $2.50	20.00
		H. S. Beer, patrolman, 7 days @ $2.50	17.50
		L. C. Plog, patrolman, 8 days @ $2.50	20.00
		L. L. Morris, patrolman, 9 days @ $2.50	22.50
		John Barrett, patrolman, 7 days @ $2.50	17.50
		Jas. Aldridge, patrolman, 7 days @ $2.50	17.50
		L. E. Lillie, patrolman, 7 days @ $2.50	17.50
		M. H. Evans, patrolman, 8 days @ $2.50	20.00
		Harry Stover, patrolman. 8 days @ $2.50	20.00
		A. D. Drake, patrolman, 8 days @ $2.50	20.00
		Walter J. Plows, patrolman, 8 days @ $2.50	20.00
		J. M. Gaunt, patrolman, 8 days @ $2.50	20.00
		W. O. DeSilva, patrolman, 8 days @ $2.50	20.00
		A. B. Adams, patrolman, 8 days @ $2.50	20.00
		S. K. Menton, patrolman, 13 days @ $2.50	32.50
		F. E. Post, patrolman, 8 days @ $2.50	20.00
		Guy E. Force, patrolman, 8 days @ $2.50	20.00
		Dick Wright, patrolman, 8 days @ $2.50	20.00
		B. F. Caine, patrolman, 7 days @ $2.50	17.50
		S. Ellis, 7 days captain @ $3.50; 2 days patrolman @ $2.50	29.50
		S. B. Sands, patrolman, 8 days @ $2.50	20.00
		Leo Rutherford. patrolman, 7 days @ $2.50	17.50
		H. H. Graves, patrolman, 7 days @ $2.50	17.50
		B. H. Hall, patrolman, 8 days @ $2.50	20.00
		S. J. Andrews, patrolman, 8 days @ $2.50	20.00
		F. R. Lockwood, 7 days captain @ $3.50; 3 days footman @ $2.50	32.00
		M. F. Lockwood, patrolman, 10 days @ $2.50	25.00
		Ray H. Bedford, patrolman, 8 days @ $2.50	20.00
		F. O. Bottorff, patrolman, 8 days @ $2.50	20.00
		Earl Hem, patrolman, 8 days @ $2.50	20.00
		F. A. Robinson, patrolman, 8 days @ $2.50	20.00
		H. B. Ford, patrolman, 8 days @ $2.50	20.00
		W W. Wilson, patrolman, 8 days @ $2.50	20.00

Date	No.	To Whom Issued		Amt.
9- 3	10627	E. M. Wentworth, pay roll Department Public Safety and Transportation, August 4-September 1, inclusive—Continued.		
		Chas. C. Helms, patrolman, 7 days @ $2.50...	17.50	
		J. M. Haines, patrolman, 8 days @ $2.50.....	20.00	
		J. P. Gregory, patrolman, 12 days @ $2.50....	30.00	
		A. F. Loomis, patrolman, 9 days @ $2.50.....	22.50	
		L. W. Wilson, patrolman, 6 days @ $2.50.....	15.00	
		L. R. Parke, patrolman, 8 days @ $2.50......	20.00	
		P. O. Bunker, patrolman, 8 days @ $2.50.....	20.00	
		Leonard Hickman, patrolman, 8 days @ $2.50	20.00	
		A. G. Gibson, patrolman, 8 days @ $2.50.....	20.00	
		C. G. Ridgeway, patrolman, 7 days @ $2.50...	17.50	
		W. E. Daily, patrolman, 7 days @ $2.50....	17.50	
		W. H. Haylock, patrolman, 6 days @ $2.50....	15.00	
		J. L. Thompson, patrolman, 7 days @ $2.50...	17.50	
		J. F. Doughman, patrolman, 7 days @ $2.50...	17.50	
		L. P. Way, auto for mail..................	5.00	
		G. W. Anspach, patrolman, 7 days @ $2.50...	17.50	
		Chas. F. Anspach, patrolman, 5 days @ $2.50.	12.50	
		Alvin J. Wagner, patrolman, 7 days @ $2.50..	17.50	
		Jno. W. Heath, patrolman, 7 days @ $2.50...	17.50	
		A. J. Andrews, patrolman, 7 days @ $2.50.....	17.50	
		Benj. Garthwait, patrolman, 7 days @ $2.50...	17.50	
		Jno. Schock, patrolman, 6 days @ $2.50.....	15.00	
		F. Hensley, patrolman, 6 days @ $2.50......	15.00	
		Harry Wills, patrolman, 7 days @ $2.50......	17.50	
		G. D. Thomas, patrolman, 7 days @ $2.50.....	17.50	
		T. L. Cullen, patrolman, 7 days @ $2.50.....	17.50	
		McMahan, patrolman, 1 day @ $2.50........	2.50	
		Ed Raynes, patrolman, 7 days @ $2.50.......	17.50	
		Frank Ostermeyer, patrolman, 5 days @ $2.50	12.50	
		Mike Russell, patrolman, 7 days @ $2.50....	17.50	
		W. T. Harrison, patrolman, 7 days @ $2.50..	17.50	
		Osmand Hylen, patrolman, 7 days @ $2.50...	17.50	
		Chas. H. Hodges, patrolman, 4 days @ $2.50...	10.00	
		Jno. J. Walrath, patrolman, 6 days @ $2.50...	15.00	
		Chas. W. Williams, patrolman, 6 days @ $2.50	15.00	
		W. H. Miller, patrolman, 5 days @ $2.50.....	12.50	
		C. E. Akes, patrolman, 4 days @ $3.50......	14.00	
		Louie Brendel, patrolman, 5 days @ $2.50...	12.50	
		Chas. Keasey, patrolman, 5 days @ $2.50....	12.50	
		D. T. Turner, patrolman, 5 days @ $2.50....	12.50	
		F. K. Stansell, patrolman, 5 days @ $2.50.....	12.50	
		Jno. W. Cox, patrolman, 4 days @ $2.50.....	10.00	
		I. F. Calloway, patrolman, 5 days @ $2.50....	12.50	
		L. M. Lehr, patrolman, 5 days @ $2.50.......	12.50	
		Glenn Crawford, mounted policeman, 4 days @ $3.50	14.00	
		J. E. Anderson, patrolman, 5 days @ $2.50...	12.50	
		Frank Perdue, patrolman, 5 days @ $2.50....	12.50	
		A. K. Banks, special policeman, 4 days @ $2.50	10.00	
		J. A. Scoville, patrolman, 3 days @ $2.50....	7.50	
		C. Goldsberry, mounted policeman, 17 days @ $3.50	59.50	
		W. M. Johnson, mounted policeman, 17 days @ $3.50	59.50	
		T. J. Lee, mounted policeman, 9 days @ $3.50.	31.50	
		H. P. Way, captain fences, mounted, 9 days @ $4.00	36.00	
		O. A. Stewart, mounted policeman, 8 days @ $3.50	28.00	

Date	No.	To Whom Issued	Amt.
9- 3	10627	E. M. Wentworth, pay roll Department Public Safety and Transportation, August 4-September 1, inclusive—Continued.	
		J. A. Moore, mounted policeman, 9 days @ $3.50	31.50
		Seth Way, captain streets, 10 days @ $4.00	40.00
		Ed Macy, mounted policeman, 8 days @ $3.50	28.00
		Jno. Jones, mounted policeman, 8 days @ $3.50	28.00
		W. S. Robbins, mounted policeman, 8 days @ $3.50	28.00
		S. O. Sprinkle, mounted policeman, 8 days @ $3.50	28.00
		Jno. H. Richart, mounted policeman, 8 days @ $3.50	28.00
		Ray Irwin, mounted policeman, 8 days @ $3.50	28.00
		B. E. Woodward, mounted policeman, 8 days @ $3.50	28.00
		Ray Henry, mounted policeman, 9 days @ $3.50	31.50
		Harley Ellis, mounted policeman, 8 days @ $3.50	28.00
		Roy Bever, mounted policeman, 8 days @ $3.50	28.00
		A. H. Conklin, mounted policeman, 8 days @ $3.50	28.00
		C. E. McKinney, mounted policeman, 8 days @ $3.50	28.00
		L. A. Caldwell, mounted policeman, 9 days @ $3.50	30.50
		W. H. Saylor, mounted policeman, 8 days @ $3.50	28.00
		J. H. Mathis, mounted policeman, 8 days @ $3.50	28.00
		Jas. Miller, mounted policeman, 7 days @ $3.50	24.50
		Ed Donoghue, mounted policeman, 6 days @ $3.50	21.00
		S. G. Pearson, mounted policeman, 2 days @ $3.50	7.00
		C. D. Freel, mounted policeman, 8 days @ $3.50	28.00
		W. H. Walker, assistant transportation, 10 days @ $2.50	25.00
		S. W. Baker, clerk at camp grounds, 12 days @ $3.00	36.00
		L. H. Thornton, mounted policeman, 13 days @ $3.50	45.50
		Boyd Brittan, mounted policeman, 13 days @ $3.50	45.50
		C. W. Brittan, Supt. camp grounds, 17 days @ $4.00	68.00
		T. J. Hudson, Marshal	45.00
		C. M. Akes, Marshal	45.00
		Carl Shields, Marshal	45.00
		L. H. Horner, watchman of barns for Marshals, 8 days @ $2.00	16.00
		Edwin Johnston, messenger and telephone, 4 days at $2.00	8.00
		Jerry Doneghy, special detective, 4 days @ $2.50	10.00

Date	No.	To Whom Issued		Amt.
9- 3	10627	E. M. Wentworth, pay roll Department Public Safety and Transportation, August 4-September 1, inclusive—Continued.		
		Frank Emery, patrolman, 2 days @ $2.50	5.00	
		James Jansen, Assistant Chief Police, 11 days @ $4.00	44.00	
		E. J. Frowick, Chief of Police, 11 days @ $5.00	55.00	
		E. T. Banks, janitor, police headquarters, 11 days @ $2.00	22.00	
		W. V. Palmer, clerk, 12 days @ $4.00	48.00	4,238.45
9- 3	10628	E. L. Beck, Supt. pay roll, Poultry Dept.:		
		W. S. Russell, Judge	$ 35.00	
		F. H. Shellaberger, Judge	35.00	
		Miss Julia Christianson, Clerk, 3 days @ $2.00	6.00	
		Geo. S. Phillips, first assistant, 12 days @ $3.00	36.00	
		Frank Geneser, assistant, 11 days @ $2.00	22.00	
		C. D. Porter, assistant, 11 days @ $2.00	22.00	
		Robt. Beck, assistant 11 days @ $2.00	22.00	
		Emerson Day, assistant, 10 days @ $2.00	20.00	
		E. L. Beck, Superintendent, 25 days @ $4.00	100.00	298.00
9- 3	10629	M. G. Thornburg, Supt. pay roll Sheep Dept., 1913 fair:		
		P. S. Shearer, Asst. Supt. Sheep, 10 days @ $4.00	$ 40.00	
		P. R. Lisher, Asst. Supt., 8 days @ $4.00	32.00	
		Edna Thomas, stenographer	8.00	
		M. G. Thornburg, Supt., 25 days @ $4.00	100.00	180.00
9- 3	10630	J. F. Summers, Supt. pay roll, Concession Dept., Ticket Takers:		
		Paul Clark, ticket taker, 5 days @ $2.50	$ 12.50	
		Frank Mason, ticket taker, 5 days @ $2.50	12.50	
		Everett Amsberry, ticket taker, 7 days @ $2.50	17.50	
		Leonard McLaren, ticket taker, 7 days @ $2.50	17.50	
		Will Higgins, ticket taker, 7 days @ $2.50	17.50	
		D. F. Forrester, ticket taker, 7 days @ $2.50	17.50	
		Russel Lewis, ticket taker, 7 days @ $2.50	17.50	
		Lester Drennan, ticket taker, 7 days @ $2.50	17.50	
		H. E. Rogers, ticket taker, 7 days @ $2.50	17.50	
		Carl Christensen, ticket taker, 7 days @ $2.50	17.50	
		Frank Keats, ticket taker, 7 days @ $2.50	17.50	
		H. H. Moyer, ticket taker, 7 days @ $2.50	17.50	
		Verne Welty, ticket taker, 7 days @ $2.50	17.50	
		Jno. O'Neil, ticket taker, 7 days @ $2.50	17.50	
		Paul Bender, ticket taker, 7 days @ $2.50	17.50	
		I. Smaltz, ticket taker, 7 days @ $2.50	17.50	
		G. A. Stahl, ticket taker, 6 days @ $2.50	15.00	
		H. E. Eales, ticket taker, 7 days @ $2.50	17.50	
		F. O. Hicks, ticket taker, 3 days	7.00	
		E. E. Beyers, ticket taker, 7 days @ $2.50	17.50	
		Alvin Cook, ticket taker, 7 days @ $2.50	17.50	
		W. A. Seeley, ticket taker, 7 days @ $2.50	17.50	
		Volney Diltz, ticket taker, 7 days @ $2.50	17.50	
		W. R. Thomas, ticket taker, 7 days @ $2.50	17.50	
		H. R. Scarff, ticket taker, 7 days @ $2.50	17.50	
		Leland Bowman, ticket taker, 7 days @ $2.50	17.50	
		Geo. Kanoff, ticket taker, 7 days @ $2.50	17.50	
		P. W. Johnson, ticket taker, 7 days @ $2.50	17.50	

Date	No.	To Whom Issued		Amt.
9- 3	10630	J. F. Summers, Supt. pay roll, Concession Dept., Ticket Takers—Continued.		
		M. A. Souers, ticket taker, 7 days @ $2.50	17.50	
		Carl Christopherson, ticket taker, 7 days @ $2.50	17.50	
		R. Murphy, ticket taker, 7 days @ $2.50	17.50	
		A. Hanson, ticket taker, 7 days @ $2.50	17.50	
		Lawrence Clark, ticket taker, 7 days @ $2.50	17.50	
		Jno. Cavenaugh, ticket taker, 7 days @ $2.50	17.50	
		Chas. E. Brown, ticket taker, 7 days @ $2.50	17.50	
		J. H. McKowen, ticket taker, 7 days @ $2.50	17.50	
		R. Herrold, ticket taker, 7 days @ $2.50	17.50	
		Ted Hinton, watchman, 8 days @ $2.50	20.00	644.50
9- 3	10631	J. F. Summers, Supt. pay roll, Concession Dept., Office Assistants:		
		Willis Summers, 16 days @ $4.00	$ 64.00	
		Harry Wilson, 14 days @ $4.00	56.00	
		R. W. Tellier, 12 days @ $4.00	48.00	
		B. M. Breed, 12 days @ $4.00	48.00	
		Fred Willis, cashier, 8 days @ $3.00	24.00	
		B. J. Thomas, cashier, 8 days @ $3.00	24.00	
		C. S. Vorse, cashier, 8 days @ $2.00	24.00	
		Don Black, cashier, 8 days @ $3.00	24.00	312.00
9- 3	10632	O. A. Olson, Supt., pay roll Admission Dept., 1913 fair:		
		C. N. Whiting, captain pass gate, 11 days @ $3.50	$ 38.50	
		Seth Howard, pass gate, 10 days @ $2.50	25.00	
		Grover Christ, pass gate, 10 days @ $2.50	25.00	
		H. E. Hendrickson, pass gate, 8 days @ $2.50	20.00	
		Byron Crawford, pass gate, 10 days @ $2.50	25.00	
		Wilfred Peterson, pass gate, 10 days @ $2.50	25.00	
		C. S. Marself, pass gate, 9 days @ $2.50	22.50	
		Wendel Osbrink, pass gate, 10 days @ $2.50	25.00	
		Roy Budlong, pass gate, 9 days @ $2.50	22.50	
		Stewart Foster, pass gate, 10 days @ $2.50	25.00	
		Harry Moore, pass gate, 10 days @ $2.50	25.00	
		T. H. Thornburg, pass gate, 8 days @ $2.50	20.00	
		I. S. Rutledge, pass gate, 4 days @ $2.50	10.00	
		W. W. Bennett, pass gate, 4 days @ $2.50 and 6 days @ $3.50	31.00	
		W. P. Butler, pass gate, 8 days @ $2.50	20.00	
		Warren S. Dudley, pass gate, 9 days @ $2.50	22.50	
		Clark Draper, pass gate, 10 days @ $2.50	25.00	
		John Deitrick, pass gate, 8 days @ $2.50	20.00	
		J. R. Baggs, pass gate, 5 days @ $2.50	12.50	
		Roy Dowell, pass gate, 8 days @ $2.50	20.00	
		Wm. Lundberg, captain street car gate, 10 days @ $3.50	35.00	
		Howard Bradle, street car gate, 10 days @ $2.50	25.00	
		Guy Weatherwax, street car gate, 8 days @ $2.50	20.00	
		Frank Wilson, street car gate, 10 days @ $2.50	25.00	
		Al Asperson, street car gate, 10 days @ $2.50	25.00	
		Jno. Batchelor, street car gate, 8 days @ $2.50	20.00	
		Helmer Johnson, street car gate, 8 days @ $2.50	20.00	

Date	No.	To Whom Issued		Amt.
9- 3	10632	O. A. Olson, Supt., pay roll Admission Dept., 1913 fair—Continued.		
		G. S. Binford, street car gate, 10 days @ $2.50	25.00	
		Marion Shields, street car gate, 10 days @ $2.50	25.00	
		P. F. Kopp, captain R. I. wagon gate, 10 days @ $3.50	35.00	
		A. Christianson, wagon gate, 8 days @ $2.50	20.00	
		J. R. Townsend, wagon gate, 10 days @ $2.50	25.00	
		G. W. Nelson, wagon gate, 9 days @ $2.50	22.50	
		A. L. Ryerson, wagon gate, 8 days @ $2.50	20.00	
		F. C. Corey, captain R. I. turnstiles, 10 days @ $3.50	35.00	
		Henry Popham, turnstiles, 8 days @ $2.50	20.00	
		A. J. Fields, turnstiles, 10 days @ $2.50	25.00	
		W. J. Hunt, turnstiles, 9 days @ $2.50	22.50	
		Vaugh Wilson, turnstiles, 10 days @ $2.50	25.00	
		G. H. Penrod, turnstiles, 10 days @ $2.50	25.00	
		F. L. Crowe, turnstiles, 10 days @ $2.50	25.00	
		A. L. Humes, captain Grand ave. turnstiles, 10 days @ $3.50	35.00	
		Harry Hull, turnstiles, 10 days @ $2.50	25.00	
		Gerald Jones, turnstiles, 10 days @ $2.50	25.00	
		W. W. West, turnstiles, 10 days @ $2.50	25.00	
		A. C. Scott, turnstiles, 10 days @ $2.50	25.00	
		Roy Ball, captain Grand avenue wagon gate, 3 days @ $3.50	10.50	
		J. A. McIntosh, wagon gate, 10 days @ $2.50	25.00	
		A. W. D. Bruyn, wagon gate, 10 days @ $2.50	25.00	
		Al Soals, wagon gate, 10 days @ $2.50	25.00	
		Wm. McCanna, wagon gate, 10 days @ $2.50	25.00	
		Jno. Hacker, wagon gate, 10 days @ $2.50	25.00	
		C. F. Nolte, captain east end amphitheater, 10 days @ $3.50	35.00	
		E. C. Bullard, gate and turnstiles, 8 days @ $2.50	20.00	
		T. F. McDonald, gate and turnstiles, 8 days @ $2.50	20.00	
		Oscar Holst, gate and turnstiles, 8 days @ $2.50	20.00	
		Tracy Wellman, gate and turnstiles, 8 days @ $2.50	20.00	
		J. E. Brooker, gate and turnstiles, 10 days @ $2.50	25.00	
		L. F. Pingel, gate and turnstiles, 8 days @ $2.50	20.00	
		Wm. Sterrenberg, gate and turnstiles, 8 days @ $2.50	20.00	
		J. P. Anderson, gate and turnstiles, 8 days @ $2.50	20.00	
		Tom Egan, gate and turnstiles, 8 days @ $2.50	20.00	
		Roy Holbrook, captain west end amphitheater, 8 days @ $3.50	28.00	
		E. A. Hanson, gates and turnstiles, 8 days @ $2.50	20.00	
		Chester Reeves, gates and turnstiles, 8 days @ $2.50	20.00	
		H. S. May, gates and turnstiles, 8 days @ $2.50	20.00	
		Tom Irish, gates and turnstiles, 8 days @ $2.50	20.00	

Date	No.	To Whom Issued		Amt.
9- 3	10632	O. A. Olson, Supt., pay roll Admission Dept., 1913 fair—Continued.		
		Fred Oxley, gates and turnstiles, 8 days @ $2.50	20.00	
		E. O. Holton, gates and turnstiles, 9 days @ $2.50	22.50	
		F. J. Wykoff, captain quarter stretch, 8 days @ $3.50	28.00	
		Walter Empson, gate, 8 days @ $2.50	20.00	
		C. E. Marvin, gate, 8 days @ $2.50	20.00	
		Vern Fairchild, captain amphitheater, 8 days @ $3.50	28.00	
		Harold Anderson, usher, 10 days @ $2.50	25.00	
		Ward Peterson, usher, 8 days @ $2.50	20.00	
		J. R. Johnson, usher, 8 days @ $2.50	20.00	
		Lloyd Wilkinson, usher, 8 days @ $2.50	20.00	
		Mort Brooks, usher, 8 days @ $2.50	20.00	
		Cecil Platts, usher, 8 days @ $2.50	20.00	
		J. J. Mowerson, usher, 8 days @ $2.50	20.00	
		Dan Howard, usher, 9 days @ $2.50	22.50	
		Edward Koons, usher, 8 days @ $2.50	20.00	
		John Day, usher, 8 days @ $2.50	20.00	
		Clyde Naylor, usher, 8 days @ $2.50	20.00	
		Ray Menzel, usher, 8 days @ $2.50	20.00	
		Chas. Blattley, usher, 8 days @ $2.50	20.00	
		Earl Eves, usher, 8 days @ $2.50	20.00	
		Jno. Lemley, usher, 8 days @ $2.50	20.00	
		Homer Patterson, usher, 8 days @ $2.50	20.00	
		Raymond Teachout, usher, 8 days @ $2.50	20.00	
		W. H. Reed, usher, 10 days @ $2.50	25.00	
		Chas. Worrell, usher, 6 days @ $2.50	15.00	
		Lyle Shimer, usher, 4 days @ $2.50	10.00	
		Phil McCann, usher, 3 days @ $2.50	7.50	
		Ernest Willis, captain of east bleachers, 8 days @ $3.50	28.00	
		O. L. Gray, captain of west bleachers, 8 days @ $3.50	28.00	
		J. W. Lindsey, captain plow gate, 8 days @ $3.50	28.00	
		Wm. Nall, plow gate and pavilion, 8 days @ $2.50	20.00	
		J. C. Overholtzer, plow gate and pavilion, 4 days @ $2.50	10.00	
		W. H. Maxwell, captain pavilion, 8 days @ $3.50	28.00	
		M. C. Crane, pass gate, 7 days @ $2.50	17.50	
		Rex Olmsted, wagon gate, 5 days @ $2.50	12.50	
		Al Wooler, horseman, 17 days @ $2.50	42.50	
		Ed Beard, tent man, 11 days @ $2.50	25.00	
		Isaac Halvorsen, tent man, 11 days @ $2.50	27.50	
		Mons Thompson, pop gate, 8 days @ $2.50	20.00	
		W. A. Hunt, mechanic, 9 days @ $3.00 and 5 nights @ $1.00	32.00	
		Jno. L. Wheeler, assistant superintendent of admissions, 11 days @ $4.00	44.00	
		N. W. McBeath, assistant admissions department, 11 days @ $4.00	44.00	
		Al Severson, assistant admissions department, 10 days @ $4.00	40.00	
		B. M. Clark, assistant admissions department, 11 days @ $4.00	44.00	2,612.50

Date	No.	To Whom Issued		Amt.
9- 3	10633	C. E. Cameron, President, pay roll, janitors, administration building, 1913 fair:		
		Jeff Logan, costodian, 21 days @ $3.50	$ 73.50	
		Jessie Graves, janitor, 18 days @ $2.50	45.00	
		M. D. Jackson, janitor, 19 days @ $2.50	47.50	
		Miles Taylor, janitor, 19 days @ $2.50	47.50	
		Ben Hack, janitor, 8 days @ $2.50	20.00	
		L. Brown, janitor, 9 days @ $2.50	22.50	
		Chas. Stewart, janitor, 1 day @ $2.50	2.50	
		Wm. Kenney, janitor, 2 days @ $2.50	5.00	
		Maud Wilkerson, matron, 17 days @ $2.50	42.50	
		A. W. Rhodes, janitor, 18 days @ $2.50	45.00	
		Jessie Estell, janitor, 19 days @ $2.50	47.50	
		Geo. S. Logan, janitor, 19 days @ $2.50	47.50	
		Cliff Williams, janitor, 9 days @ $2.50	22.50	468.50
9- 3	10634	E. M. Reeves, Superintendent, pay roll, horticultural department, 1913:		
		R. S. Herrick, labor and expense of Herrick and Kirkpatrick, box exhibit	$ 44.63	
		Chas. O. Garrett, 30 bushels apples @ 75c	22.50	
		Frank McCall, 5 bushels apples and 114 boxes	17.43	
		L. Greene, expense setting up grader	2.00	
		Victor Felter, judge, 4 days @ $5.00	20.00	
		B. Stuart, judge, 3 days @ $5.00	15.00	
		F. O. Harrington, judge, 3 days @ $5.00	15.00	
		Irving Hauck, night watch, 6 days @ $2.50	15.00	
		E. M. Reeves, express	5.21	
		J. W. Bennett, assistant horticultural department, 10 days @ $4.00	40.00	196.77
9- 3	10635	G. S. Gilbertson, Treasurer, pay roll, treasurer's department, 1913 fair:		
		John Vrba, ticket seller, 7 days @ $3.25	$ 22.75	
		Floyd Soulee, ticket seller, 8 days @ $3.25	26.00	
		Frank Rowat, ticket seller, 9 days @ $3.25	29.25	
		K. C. Howe, ticket seller, 10 days @ $3.25	32.50	
		Paul Brown, ticket seller, 10 days @ $3.25	32.50	
		S. W. Wright, ticket seller, 6 days @ $3.25	19.50	
		R. S. Hayward, ticket seller, 10 days @ $3.25	32.50	
		J. Hugh Jackson, ticket seller, 6 days @ $3.25	19.50	
		C. J. Ahern, ticket seller, 10 days @ $3.25	32.50	
		J. A. Stanley, ticket seller, 6 days @ $3.25	19.50	
		T. A. Lauson, ticket seller, 10 days @ $3.25	32.50	
		Chas. Gladall, ticket seller, 10 days @ $3.25	32.50	
		H. S. Redhead, ticket seller, 10 days @ $3.25	32.50	
		H. A. Smith, ticket seller, 10 days @ $3.25	32.50	
		Chas. Osgood, ticket seller, 10 days @ $3.25	32.50	
		Iowa Welsh, ticket seller, 9 days @ $3.25	29.25	
		M. A. Hauge, ticket seller, 10 days @ $3.25	32.50	
		Geo. Heggen, ticket seller, 10 days @ $3.25	32.50	
		Vane Coen, ticket seller, 10 days @ $3.25	32.50	
		Russell Thomas, ticket seller, 9 days @ $3.25	29.25	
		Emory Samson, ticket seller, 9 days @ $3.25	29.25	
		Harry Gross, ticket seller, 9 days @ $3.25	29.25	
		Thos. Householder, ticket seller, 10 days @ $3.25	32.50	
		Clarence Towne, ticket seller, 12 days @ $3.25	39.00	
		Ira Jones, ticket seller, 12 days @ $3.25	39.00	
		Phil Worth, superintendent reserved seats	60.00	
		Ed Sunberg, special guard, 12 days @ $4.00	48.00	

Date	No.	To Whom Issued		Amt.
9- 3	10635	G. S. Gilbertson, Treasurer, pay roll, treasurer's department, 1913 fair—Continued.		
		Gus Hansing, special guard, 12 days @ $4.00	48.00	
		Gus Hansing, automobile, 12 days @ $2.50..	30.00	
		C. E. Lanning, ticket sellers tent, 12 days @ $3.25	39.00	
		G. S. Gilbertson, Corbin automobile, 13 days @ $10.00	130.00	
		L. M. Barlow, assistant treasurer	100.00	
		C. A. Isaacs, assistant treasurer.............	100.00	
		B. H. Thomas, assistant treasurer	100.00	
		Ralph Cook, ticket seller, 5 days @ $3.25...	16.25	
		Sundry expense, adding machine $5.00; gasoline $1.65; sundry supplies $2.30..........	8.95	1,434.20
9- 3	10636	J. P. Mullen, Superintendent, pay roll Machinery department, 1913 fair:		
		R. W. Sager, sprinkling machinery hall, 6 days @ $2.00............................	$ 12.00	
		R. W. Sager, hauling water, 9½ days @ $6.50	61.75	
		A. E. Sargent, assistant, 12 days @ $2.50....	30.00	
		J. D. Kelley, assistant, 10 days @ $2.50.....	25.00	
		F. R. Barnes, assistant, 20 days @ $2.50.....	50.00	
		Frank Thomas, assistant, 9 days @ $2.50.....	22.50	
		C. H. Turk, assistant, 75 days @ $4.00......	300.00	
		C. H. Turk, stenographer	26.60	
		C. H. Turk, supplies	3.15	
		A. E. Sargent, assistant, 1 day @ $2.50....	2.50	533.50
9- 3	10637	F. E. Sheldon, Superintendent, pay roll, agricultural department, 1913 fair:		
		J. W. Coverdale, assistant superintendent, 12 days @ $4.00.........................	$ 48.00	
		M. E. Meyers, assistant superintendent, 12 days @ $3.00	36.00	
		Don Neiman, assistant superintendent, 10 days @ $2.00	20.00	
		Harry Laird, superintendent pantry department, 12 days @ $4.00	48.00	
		Don Shroyer, assistant, pantry department, 11½ days @ $2.50	28.75	
		Hattie Shroyer, assistant, pantry department, 10 days @ $2.50	25.00	
		Morris Keating, assistant, pantry department, 6½ days @ $2.50.................	16.25	
		Geo. Wright, watchman, 7 days @ $2.50....	17.50	
		Mrs. J. K. Barlow, judge, pantry department	20.00	
		Grant Chapman, judge, corn department....	30.00	
		M. L. Bowman, judge, grain and seeds......	20.00	
		L. Burnett, assistant judge, grain and seeds..	20.00	
		Victor Felter, judge, individual farm exhibits	30.00	
		Walter Plows, judge, vegetables	30.00	
		Eugene Secor, judge, honey	10.00	
		Harry Hull, assistant, pantry, 1 day @ $2.50	2.50	
		Morris Keating, assistant, pantry, 1 day @ $2.50	2.50	404.50

Date	No.	To Whom Issued		Amt.
9- 3	10638	T. C. Legoe, Superintendent, pay roll, fine arts department, 1913 fair:		
		Paula Fenske, art judge, salary and expense	$ 45.00	
		J. H. Kelley, assistant superintendent, 12 days @ $4.00	48.00	
		F. H. Clements, clerk for superintendent, 8 days @ $3.25	26.00	
		Mrs. F. H. Schoenhut, assistant superintendent, art department, 11 days @ $3.25	35.75	
		Margaret Scott, assistant superintendent, fancy work, 11 days @ $3.25	35.75	
		Helen Wharton, assistant superintendent, china department, 11 days @ $3.25	35.75	
		Mrs. Tom Geneva, assistant superintendent, fancy work department, 11 days @ $3.25	35.75	
		Marion Wentworth, assistant, fancy work department, 11 days @ $2.50	27.50	
		Mrs. Bertha Randall, assistant, fancy work department, 10 days @ $2.50	25.00	
		Mrs. C. H. Turk, assistant, fancy work department, 9 days @ $2.50	22.50	
		Irma Pullen, assistant, fancy work department, 10 days @ $2.50	25.00	
		Mrs. J. W. Hess, judge, fancy work department, 5 days @ $5.00	25.00	
		Leo Schoonover, helper in picture department, 11 days @ $2.50	27.50	
		Roy Bedford, helper, 4 days @ $2.50	10.00	
		Will Thompson, helper, fancy work department, 7 days @ $2.50	17.50	
		F. O. Battorff, helper, 4 days @ $2.50	10.00	
		W. W. Wilson, helper, 4 days @ $2.50	10.00	
		H. B. Ford, helper, 4 days @ $2.50	10.00	472.00
9- 3	10639	C. F. Curtiss, Superintendent, pay roll, horse department, 1913:		
		Wm. Bell, judging Percherons	$ 150.00	
		E. A. Trowbridge, judging Clydesdales	125.00	
		R. B. Ogilvie, judging draft geldings	100.00	
		Alex Galbraith, judging Shires	100.00	
		Thos. W. Bell, manager night show	175.00	
		W. A. Dobson, judging standard breds	75.00	
		W. J. Kennedy, judging Belgians and ponies	50.00	
		Walter Palmer, judging harness horses	150.00	
		John O. Williams, judging harness horses	150.00	
		R. M. Gridley, assistant in horse barns, 8 days @ $3.50	28.00	
		Chas. Rhinehart, assistant superintendent, 15 days @ $4.00	60.00	
		C. N. Arnett, assistant superintendent, 9 days @ $4.00	36.00	
		Don L. Berry, assistant superintendent, 8 days @ $4.00	32.00	
		Chas. Summers, assistant superintendent, 9 days @ $4.00	36.00	
		Harold Brenton, office boy, 9 days @ $2.00	18.00	
		Ryle McKee, assistant superintendent, 5 days @ $3.50	17.50	
		D. Moss, assistant, 6 days @ $3.50	21.00	
		I. C. Rutledge, assistant superintendent, 6 days @ $4.00	24.00	

Date	No.	To Whom Issued		Amt.
9- 3	10639	C. F. Curtiss, Superintendent, pay roll, horse department, 1913—Continued.		
		J. B. Hockersmith, megaphone work, 6 days @ $3.50	21.00	
		James Steele, barn work, 3 days @ $2.50	7.50	
		Ray Galantine, grading stock, 1-5 day @ $2.50	50.00	
		General Lincoln, judging military horses	10.00	1,386.50
9- 3	10640	R. S. Johnston, Superintendent, pay roll, swine department, 1913:		
		Lloyd Mugg, judge, Poland China	$ 75.00	
		A. J. Lovejoy, judge, Duroc Jersey	75.00	
		W. A. Hoover, judge, Chester White	50.00	
		Wilson Rowe, judge, Hampshire	35.00	
		C. C. Roup, judge, Tamworth and Yorkshire	20.00	
		J. Carson Duncan, assistant, 10 days @ $4.00	40.00	
		Edwin Hicklin, assistant, 6 days @ $4.00	24.00	
		Helen Johnston, assistant, 10 days @ $4.00	40.00	359.00
9- 3	10641	E. J. Curtin, Superintendent, pay roll, speed department, 1913:		
		O. P. Updegraff, starting judge	$ 150.00	
		Magnus Flaws, presiding judge	100.00	
		A. O. Laughlin, judge, 2 days @ $5.00	10.00	
		Parley Sheldon, judge, 6 days @ $5.00	30.00	
		L. H. Pickard, timer, 6 days @ $5.00	30.00	
		J. T. Gill, timer, 6 days @ $5.00	30.00	
		J. F. Garrison, timer, 6 days @ $5.00	30.00	
		Geo. E. Hoggs, superintendent of track, 11 days @ $3.75	41.25	
		Geo. E. Hogge, railroad fare, Des Moines and return	5.60	
		M. L. Markham, barn boss, 20 days @ $3.00	60.00	
		E. A. Elliott, clerk of course, 14 days @ $3.75	52.50	
		E. A. Elliott, railroad fare, Des Moines and return	4.40	
		A. L. Denio, assistant superintendent speed, 14 days @ $4.00	56.00	
		A. L. Denis, railroad fare, Des Moines and return	5.60	
		Judson Zentmire, call boy, 7 days @ $3.25	22.75	
		Leslie Swanson, score boy, 7 days @ $3.25	22.75	
		Thaddeus Olson, call boy, 7 days @ $3.25	22.75	
		Casper Selland, uniform boy, 7 days @ $3.25	22.75	
		Isaac Sangston, gate man, 8 days @ $2.50	20.00	
		Joe Head, blacksmith, 6 days @ $2.00	12.00	728.35
9- 3	10642	C. W. Phillips, Superintendent, pay roll, ticket auditing department, 1913 fair:		
		Ben Phillips, assistant auditor of tickets, 11 days @ $3.25	$ 35.75	
		Frank Beaton, assistant auditor of tickets, 11 days @ $3.25	35.75	
		Don Judd, assistant auditor of tickets, 11 days @ $3.25	35.75	
		Ralph A. Wilson, assistant auditor of tickets, 11 days @ $3.25	35.75	
		J. U. Sammis, Jr., assistant auditor of tickets, 11 days @ $3.25	35.75	

Date	No.	To Whom Issued		Amt.
9- 3	10642	C. W. Phillips, Superintendent, pay roll, ticket auditing department, 1913 fair—Continued.		
		Arthur Horrigan, assistant auditor of tickets, 11 days @ $3.25	35.75	
		Joe Gregory, assistant auditor of tickets, 11 days @ $3.25	35.75	
		M. C. Garst, assistant auditor of tickets, 11 days @ $3.25	35.75	
		H. C. Eals, assistant auditor of tickets, 3½ days @ $3.25	11.38	
		Allie Cox, assistant auditor of tickets, 7 days @ $3.25	22.75	
		W. C. Skiff, assistant superintendent of tickets, 12 days @ $4.00	48.00	368.13
9- 3	10643	H. L. Pike, Superintendent, pay roll, cattle department, 1913 fair:		
		Chas. S. Hill, judge, Guernsey	$ 87.50	
		Andrew Boss, judge, Red Polled	56.70	
		L. G. Shaver, judge, Polled Durham	25.00	
		H. G. Van Pelt, judge, Jersey and Brown Swiss	95.94	
		W. J. Billette, judge, Holsteins	111.00	
		T. E. Robson, judge, Short Horns	167.00	
		W. J. Kennedy, judge, Ayrshires	25.00	
		E. T. Davis, judge, Aberdeen Angus	85.00	
		Chas. Escher, Jr., judge, Galloway	65.00	
		J. C. Kinzer, judge, Herefords	195.00	
		Axel Hansen, judge, Dutch Belted	10.00	
		W. H. Pew, assistant superintendent, 7 days @ $4.00	28.00	
		E. F. Ferrin, assistant superintendent, 7 days @ $4.00	28.00	
		H. H. Kildee, assistant superintendent, 9 days @ $4.00	36.00	
		Milton Smith, assistant superintendent, 9 days @ $4.00	36.00	
		F. L. French, ribbon clerk, 7 days @ $2.50	17.50	
		Chas. Meltzer, ribbon clerk, 7 days @ $2.50	17.50	
		Harry Staves, office boy, 9 days @ $1.00	9.00	1,095.14
9- 3	10644	Wesley Greene, Superintendent, pay roll, floricultural department, 1913 fair:		
		Theo. Ewoldt, judge, 6 days @ $5.00	$ 30.00	
		G. M. Scott, janitor and watchman, 7 days @ $2.50	17.50	
		Wesley Greene, superintendent, 11 days @ $4.00	44.00	91.50
9- 3	10645	Iowa Trust and Savings Bank, bills payable and interest		3,130.00
9- 3	10646	Cottage Grove Dining Hall, meals, boys' camp		790.67
9- 4	10647	W. W. Moore, billboard advertising 1913		302.60
9- 4	10648	W. J. Anderson, 157½ bushels corn, forage department		110.25

Date	No.	To Whom Issued		Amt.
9- 4	10649	A. R. Corey, Secretary, pay roll, babies health contest:		
		Mary T. Watts, superintendent, 8 days @ $4.00	$ 32.00	
		Florence Sherborn, judge, 5 days @ $5.00	25.00	
		Lenna Means, judge, 5 days @ $5.00	25.00	
		Margaret Clark, judge, 5 days @ $5.00	25.00	
		Velura Powell, judge, 5 days @ $5.00	25.00	
		Lucy Harbach, judge, 5 days @ $5.00	25.00	
		Martha Welpton, judge, 5 days @ $5.00	25.00	
		Sophie Hinze Scott, judge, 5 days @ $5.00	25.00	
		Margaret Armstrong, judge, 2 days @ $5.00	10.00	
		Nelle Noble, judge, 1 day @ $5.00	5.00	
		Jennie Ghrist, judge, 1 day @ $5.00	5.00	
		Kathryn Earhart, nurse, 4 days @ $3.50	14.00	
		Maud Sutton, nurse, 4 days @ $3.50	14.00	
		Mrs. A. O. Ruste, first assistant superintendent, 5 days at $2.50	12.50	
		Hazel Saddon, stenographer and clerk, 5 days @ $2.50	12.50	
		Mary T. Watts, incidental expense	10.25	290.25
9- 4	10650	L. H. Kurtz, postmaster, postage, Greater Iowa, August 1, 1913		6.00
9-10	10651	Urban Portel, carfare office boy, July and August		3.90
9-11	10652	H. R. McCollam, 10 tons 635 pounds clover hay, forage department		92.86
9-12	10653	Shannon & Mott, first payment, mill feed, forage department		1,000.00
9-13	10654	Potts Bros., sixth estimate, cement work contract		500.00
9-13	10655	A. V. Storm, expense account, judging school exhibit		21.70
9-13	10656	Western Union Telegraph Co., messages, horse depart, Ames station		1.99
9-13	10657	N. H. Gentry, judge, Berkshires, swine department		63.00
9-13	10658	The Horse Review, advertising speed program, 1913		203.42
9-13	10659	Studebaker Corporation, street sprinkler, grounds		392.50
9-13	10660	A. Olson, cleaning amphitheater, bleachers and paddock		30.00
9-13	10661	Homestead Printing Co., part payment 1913 printing bill		1,000.00
9-13	10662	L. H. Kurtz, postmaster, postage		20.00
9-19	10663	W. B. Barney, Superintendent, pay roll, dairy department and supplies, ice cream stand, 1913 fair:		
		Geo. Kratz, disher, ice cream stand, 8 days @ $2.50	$ 20.00	
		Marie Mally, collector, ice cream stand, 6 days @ $3.00	18.00	
		O. M. Corrigan and family	47.30	
		Rodney Hudson, disher, ice cream stand, 6 days @ $2.50	15.00	
		Fred Hudson, disher, ice cream stand, 6 days @ $2.50	15.00	
		Lawrence Boutin, assistant, butter scoring and exhibit, 6 days @ $2.50	15.00	
		Alice Moser, waiter, ice cream stand, 7 days @ $2.00	14.00	
		F. C. Barney, assistant, dairy department, 12½ days @ $3.25	40.62	
		Irene Hardin, waiter, ice cream stand, 7 days @ $2.00	14.00	

Date	No.	To Whom Issued		Amt.
9-19	10663	W. B. Barney, Superintendent, pay roll, dairy department and supplies, ice cream stand, 1913 fair—Continued.		
		Gertie Grimm, waiter, ice cream stand, 5¾ days @ $2.50	14.35	
		Dora Dickey, waiter, ice cream stand, 5¾ days @ $2.50	14.35	
		Stoner McCray System, display cards, butter exhibit	4.90	
		B. F. Swanson Co., Inc., rental typewriter, butter scoring	1.00	
		Brinsmaid & Co., 1 gross teaspoons	1.44	
		Younker Bros., 210 yards of bunting, butter exhibit	8.40	
		E. A. Crosby, watchman, dairy department	12.50	
		B. C. Iliff, expenses, assistant superintendent	13.55	
		Langan Bros. Co., ice cream dishes and spoons	9.75	
		C. C. Taft Co., ice cream, 85 gallons @ 75c	63.75	
		Hutchinson Purity Ice Cream Co., 470 gallons @ 75c	352.50	
		American Laundry, laundrying aprons and towels	2.46	
		Des Moines Tent and Awning Co., rental stoves, cots and bedding	3.10	
		J. J. Ross, butter judge	7.50	
		P. A. Clark, butter judge	7.50	
		H. E. Forrester, butter judge	7.50	
		Sanders Ice Cream Co., 10 gallons @ 75c	7.50	
		Fair Store, oil cloth, aprons and towels	14.97	
		Beatrice Creamery Co., butter used in display	15.60	758.54
9-19	10664	C. W. Phillips, per diem and mileage, auditing committee meeting		33.00
9-20	10665	A. R. Corey, Secretary, pay roll No. 18 (grounds), August 31st-September 13th:		
		Wm. Barton, labor on grounds, 5 days @ $3.00	$ 15.00	
		Albert Groom, labor on grounds, 5½ days @ $2.25	12.37	
		Fred A. Wallace, labor on grounds, 7 days @ $2.50	17.50	
		Fred Van Voorhes, labor on grounds, 6½ days @ $2.50	16.25	
		Geo. Whitney, foreman, 3 days 5 hours @ $2.75	9.62	
		H. F. Deets, foreman, 12 days @ $3.00	36.00	
		Andy Johnson, labor on grounds, 8 days 9 hours @ $3.00	17.80	
		John Brown, labor on grounds, 1 day @ $4.00	4.00	
		C. Moyer, labor on grounds, 1 day @ $4.00	4.00	
		Alex Cruickshank, labor on grounds, 6 days @ $2.00	12.00	
		W. S. Gooding, labor on grounds, 2 days @ $2.50	5.00	
		Hoyt Woodward, labor on ground, 10 days 5 hours @ $4.00	42.00	
		Chas. Welton, labor on grounds, 10 days @ $4.00	40.00	
		Don Paul, labor on grounds, 1½ days @ $2.25	3.37	
		Ted Woodward, labor on grounds, 1 day @ $2.00	2.00	

Date	No.	To Whom Issued		Amt.
9-20	10665	A. R. Corey, Secretary, pay roll No. 18 (grounds), August 31st-September 13th—Continued.		
		Harry Tschontz, labor on grounds, 1 day @ $2.00	2.00	
		Fred Meyers, labor on grounds, 10 days @ $4.00	40.00	
		Chas. Morrison, labor on grounds, 5 days @ $3.50	17.50	
		Chas. Morrison, labor on grounds, 4 days @ $4.00	16.00	
		Carl Heggen, labor on grounds, 10 days @ $3.00	30.00	
		Jno. Olson, labor on grounds, 10 days @ $2.00	20.00	
		Theo. Broerman, labor on grounds, 11 days @ $1.75	19.25	
		W. H. Anderson, labor on grounds, 9 days @ $2.00	18.00	
		I. J. Whitmer, labor on grounds, 12 days @ $2.00	24.00	
		Dave Wright, labor on grounds, 12 days @ $2.00	24.00	
		French Payton, labor on grounds, 4 days @ $2.00	8.00	
		Jno. Kalny, labor on grounds, 11 days @ $2.00	22.00	
		John Wright, labor on grounds, 10 days 5 hours @ $2.00	21.00	
		Geo. Mizner, labor on grounds, 12 days @ $2.00	24.00	
		Leo Paul, labor on grounds, 4 days 2 hours @ $2.00	8.40	
		Henry Grandgeorge, labor on grounds, 11 days 5 hours @ $2.50	28.75	
		Chas. Daughenbaugh, labor on grounds, 10 days @ $2.00	20.00	
		R. E. McLaughlin, electrician, 68 hours @ 42.7c	29.04	
		Wm. Robinson, labor on grounds, 2 days @ $2.25	4.50	
		M. Burnett, labor on grounds, 10 days @ $2.00	20.00	
		Nathan Williams, labor on grounds, 7½ days @ $2.50	18.75	
		James Beck, labor on grounds, 7½ days @ $2.50	18.75	
		Walter Hunt, foreman, 7 days @ $3.00	21.00	
		H. P. Stouffer, labor on grounds, 6 days 5 hours @ $3.00	19.50	711.35
9-20	10666	Manhattan Oil Co., 2 cars road oil and supplies grounds	$	656.58
9-20	10667	Pray and Comerford, 12 bubbling cups and miscellaneous plumbing		97.92
9-20	10668	Jno. Cree, 5 tons 190 lbs. timothy hay, forage		45.85
9-20	10669	Geo. K. Scott, extra clerk 15 days, September, 1913		45.00
9-24	10670	Globe Ticket Co., general admission and side show ticket, 1913, printing		155.35
9-24	10671	Wm. Austin, refund stall rent, cattle department, 1913		4.00
9-24	10672	S. M. Croft & Sons, refund stall rent cattle department, 1913		2.00
9-24	10673	F. H. Ehlers, refund stall rent, cattle department, 1913		6.00

Date	No.	To Whom Issued	Amt.
9-24	10674	Wm. Herkelman, refund stall rent, cattle department, 1913	4.00
9-24	10675	Iowana Farms, refund stall rent, cattle department, 1913	8.00
9-24	10676	G. R. Williams, refund stall rent, cattle department, 1913	8.00
9-24	10677	Jos. C. Brunk, refund stall rent, horse department, 1913	8.00
9-24	10678	E. F. Brown, refund stall rent, horse department, 1913	2.00
9-24	10679	Brown & Walker, refund stall rent, horse department, 1913	2.00
9-24	10680	W. S. Corsa, refund stall rent, horse department, 1913	8.00
9-24	10681	Crawford & Griffin, refund stall rent, horse department, 1913	2.00
9-24	10682	Chas. Calamese, refund stall rent, horse department, 1913	8.00
9-24	10683	Deierling & Otto, refund stall rent, horse department, 1913	2.00
9-24	10684	C. B. Dannen & Sons, refund stall rent, horse department, 1913	2.00
9-24	10685	Dunhams, refund stall rent, horse department, 1913	10.00
9-24	10686	W. L. DeClow, refund stall rent, horse department, 1913	34.00
9-24	10687	R. F. French, refund stall rent, horse department, 1913	4.00
9-24	10688	C. G. Good, refund stall rent, horse department, 1913	8.00
9-24	10689	Frank E. Huston, refund stall rent, horse department, 1913	4.00
9-24	10690	F. L. Huston & Son, refund stall rent, horse department, 1913	4.00
9-24	10691	Hildebrand Bros., refund stall rent, horse department, 1913	2.00
9-24	10692	Iowana Farms, refund stall rent, horse department, 1913	2.00
9-24	10693	Chas. Irvine, refund stall rent, horse department, 1913	6.00
9-24	10694	C. F. Jones, refund stall rent, horse department, 1913	2.00
9-24	10695	J. T. Judge, refund stall rent, horse department, 1913	2.00
9-24	10696	J. A. Knott, refund stall rent, horse department, 1913	6.00
9-24	10697	E. R. Kindred, refund stall rent, horse department, 1913	2.00
2-24	10698	P. W. Moffett, refund stall rent, horse department, 1913	2.00
9-24	10699	Geo. McCray, refund stall rent, horse department, 1913	8.00
9-24	10700	Morris Bros., refund stall rent, horse department, 1913	6.00
9-24	10701	H. H. Polk, refund stall rent, horse department, 1913	2.00
9-24	10702	Jas. Pedley, refund stall rent, horse department, 1913	2.00
9-24	10703	Pabst Stock Farm, refund stall rent, horse department, 1913	22.00
9-24	10704	B. F. Redman, refund stall rent, horse department, 1913	2.00
9-24	10705	Frank M. Shaw, refund stall rent, horse department, 1913	6.00
9-24	10706	J. G. Scott, refund stall rent, horse department, 1913	2.00
9-24	10707	I. Ross Thompson, refund stall rent, horse department, 1913	2.00
9-24	10708	J. W. Thompson, refund stall rent, horse department, 1913	2.00
9-24	10709	C. R. Wells, refund stall rent, horse department, 1913	2.00
9-24	10710	F. J. Woltman, refund stall rent, horse department, 1913	2.00

Date	No.	To Whom Issued	Amt.
9-24	10711	Wild Rose Farm, refund stall rent, horse department, 1913	6.00
9-24	10712	Andrew Wilfong, refund stall rent, horse department, 1913	4.00
9-24	10713	T. R. Young, refund stall rent, horse department, 1913	4.00
9-24	10714	C. W. McDermott, refund stall rent, horse department, 1913	2.00
9-24	10715	Perry Ridenour, carfare office boy, July and August	2.15
9-24	10716	L. Kammerer, refund rent, sheep department	8.00
9-25	10717	Potts Bros., final settlement cement work contract	1196.47
9-26	10718	Iowa Telephone Company, messages, Ames station	1.65
9-26	10719	O. A. Olson, expense attending Minnesota State Fair	15.23
9-26	10720	C. E. Cameron, expense attending Minnesota State Fair	24.34
9-26	10721	Chas. Caldwell, scavenger contract, grounds, 1913	100.00
9-26	10722	B. F. Osborn, superintendent expense account, Iowa Pioneer Day	135.00
9-26	10723	C. E. Cameron, per diem and mileage, Executive Committee meeting	30.00
9-26	10724	O. A. Olson, per diem and mileage, Executive Committee meeting	31.50
9-27	10725	Des Moines Daily News, display advertising, 1913 fair	263.96
9-27	10726	Des Moines Daily Capital, display advertising, 1913 fair	287.56
9-27	10727	Wallaces' Farmer, display advertising, 1913 fair	250.00
9-27	10728	Breeders' Gazette, display advertising, 1913 fair	196.00
9-27	10729	Kimballs' Dairy Farmer, display advertising, 1913 fair	91.00
9-27	10730	The Road-Maker, display advertising, 1913 fair	33.25
9-27	10731	The Homestead Co., display advertising, 1913 fair	263.45
9-27	10732	The Farmer and Breeder, display advertising, 1913 fair	75.00
9-27	10733	Chicago Daily Drovers' Journal, display advertising, 1913 fair	25.00
9-27	10734	Chicago Live Stock World, display advertising, 1913 fair	28.00
9-27	10735	The Chronicle Publishing Co., display advertising, 1913 fair	36.00
9-27	10736	Implement Trade Journal, display advertising, 1913 fair	60.00
9-27	10737	Western Poultry Journal, display advertising, 1913 fair	14.00
9-27	10738	Western Newspaper Union, plate service county newspapers	710.78
9-27	10739	H. R. Baker, advertising, Wapello county, 1913	12.00
9-27	10740	Geo. E. Bliss, advertising, Adams county, 1913	10.00
9-27	10741	Jno. J. Curry, advertising, Cass county, 1913	15.00
9-27	10742	T. E. Grissell, advertising, Guthrie county, 1913	12.00
9-27	10743	Geo. W. Haynes, advertising, Hardin county, 1913	15.00
9-27	10744	L. C. Hoffman, advertising, Decatur county, 1913	12.00
9-27	10745	Geo. A. Hitchcock, advertising, Johnson county, 1913	10.00
9-27	10746	Loren Johnston, advertising, Wayne county, 1913	10.00
9-27	10747	H. B. Lizer, advertising, Black Hawk county, 1913	20.00
9-27	10748	E. V. McBroom, advertising, Grundy county, 1913	20.00
9-27	10749	James Nowak, advertising, Poweshiek county, 1913	10.00
9-27	10750	Loren Perrin, advertising, Monroe county, 1913	12.00
9-27	10751	O. W. Roush, advertising, Ringgold county, 1913	15.00
9-27	10752	Peter Stephany, advertising, Carroll county, 1913	20.00
9-27	10753	H. B. Turner, advertising, Hancock county, 1913	12.00
9-27	10754	Des Moines Electric Co., light service, 1913 fair	633.40
9-27	10755	Milwaukee Label and Seal Co., 25,000 gummed labels	30.17
9-27	10756	The Osborn Company, 3,000 advertising hangers	252.00
9-27	10757	Wesley Greene, superintending planting of flowers on grounds, 1913	50.00
9-27	10758	Pinkerton's National Detective Agency, detective service, 1913 fair	175.29

Date	No.	To Whom Issued		Amt.
9-27	10759	Vanderslice & Stahmer Shoe Company, refund on tickets		1.50
9-27	10760	F. Brody & Sons Co., refund on tickets		6.25
9-27	10761	Mrs. F. P. Carleton, matron rest cottage, 1913 fair		29.85
9-27	10762	Carl Loper, assistant rest cottage, 1913 fair		22.50
9-27	10763	Great Western Circuit, dues, 1913		90.00
9-27	10764	Western Horseman, advertising speed program, 1913		85.80
9-27	10765	Shaver Carriage Co., wagon repairs		37.50
9-27	10766	Weldon, Williams, Lick Co., printing coupon tickets, 1913 fair		136.10
9-27	10767	Implement Trade Journal, refund on tickets		.50
9-27	10768	W. S. Frazier & Co., rent 2 sulkies, speed department.		24.00
9-27	10769	Sciota Sign Co., 8,000 outdoor signs		115.00
9-27	10770	American Lithographing Co., 3,000 stallion bulletins and miscellaneous printing		368.95
9-27	10771	Fred Hethershaw, grain decorations agricultural building, and assistant superintendent agricultural department		400.00
9-27	10772	W. B. Barney, superintendent dairy department, 15 days		60.00
9-27	10773	E. C. Bishop, expense account school exhibits department		8.25
9-27	10774	A. R. Corey, attending Minnesota and South Dakota State Fairs		45.37
9-27	10775	A. R. Corey, expense attending Interstate fair, Sioux City		16.34
9-27	10776	A. R. Corey, expense attending Nebraska State Fair		15.20
9-27	10777	C. A. Nash, expense attending Minnesota State Fair		22.05
9-27	10778	H. N. Whitney, expense attending Minnesota State Fair		18.70
9-27	10779	Superior Film Manufacturing Co., 1530 feet moving picture film, 1913 fair		500.00
9-27	10780	A. R. Corey, secretary, first payment on country newspaper advertising		3,082.55
9-27	10781	T. W. Davis, five days' services, watchman police department		12.50
9-27	10782	E. C. Bishop, pay roll school exhibits department, 1913 fair:		
		J. E. Cundy, assistant, 11 days @ $4.00	$ 44.00	
		Gertrude Peterson, secretary, 4 days @ $3.00	12.00	
		Mary Chidester, secretary, 2½ days @ $3.00	7.50	
		Ruth Morrison, assistant, canning demonstration, 6 days @ $3.00	18.00	
		Anna Bullock, assistant canning demonstration, 6 days @ $3.00	18.00	
		R. S. Farrar, assistant, 5 days @ $4.00	20.00	
		J. O. Mitchell, assistant, 10½ days @ $3.50	36.75	
		Dean Mitchell, helper, 8 days @ $2.00	16.00	
		E. C. Bishop, superintendent, 15 days @ $4.00	60.00	
				232.25
9-29	10783	A. R. Corey, secretary, pay roll No. 19 (grounds) September 14-September 27, inclusive:		
		French Payton, labor on grounds, 1 day @ $2.00	$ 2.00	
		John Olson, labor on grounds, 9 days @ $2.00	18.00	
		Chas. Morrison, labor on grounds, 10 days @ $3.50	35.00	
		T. W. Davis, labor on grounds, 2 days @ $3.00	6.00	
		John Wright, labor on grounds, 7 days 4 hours @ $2.00	14.80	
		Theo Broerman, labor on grounds, 5 days 4 hours @ $1.75	9.45	
		Dave Wright, labor on grounds, 12 days @ $2.00	24.00	

Date	No.	To Whom Issued		Amt.
9-29	10783	A. R. Corey, secretary, pay roll No. 19 (grounds) September 14-September 27, inclusive—Continued.		
		Carl Heggen, labor on grounds, 4 days 8 hours @ $3.00	14.40	
		A. Lammey, labor on grounds, 15 days, 1 hour @ $4.00	60.40	
		Jno. Brown, labor on grounds, 8 days 5 hours @ $4.00	34.00	
		Fred Myers, labor on grounds, 10 days 3 hours @ $4.00	41.20	
		Hoyt Woodward, labor on grounds, 10 days 3 hours @ $4.00	41.20	
		Joy Moyer, labor on grounds, 6 days 3 hours @ $4.00	25.20	
		Geo. Whitney, foreman, 7 days and 5 hours @ $2.75	20.62	
		H. F. Deets, labor on grounds, 10 days @ $3.00	30.00	
		Walter Hunt, labor on grounds, 10 days @ $3.00	30.00	
		Chas. Daughenbaugh, labor on grounds, 10 days 3 hours @ $2.00	20.60	
		Jno. Kalny, labor on grounds, 11 days 3 hours @ $2.00	22.60	
		I. J. Whitmer, labor on grounds, 11 days 3 hours @ $2.00	22.60	
		M. Burnett, labor on grounds, 11 days 5 hours @ $2.00	23.00	
		Chas. Welton, labor on grounds, 4 days 3 hours @ $4.00	17.20	
		Geo. Mizner, labor on grounds, 11 days 5 hours @ $2.00	23.00	
		Henry Grandgeorge, labor on grounds, 4 days 5 hours @ $2.50	11.25	546.52
9-30	10784	A. R. Corey, salary, September, 1913		183.33
9-30	10785	H. N. Whitney, salary, September, 1913		166.66
9-30	10786	C. A. Nash, salary, September, 1913		125.00
9-30	10787	Elsie Colton, salary, September, 1913		100.00
9-30	10788	J. H. Deemer, salary, September, 1913		100.00
9-30	10789	Edith K. Smith, salary, September, 1913		85.00
9-30	10790	Minnie Truax, salary, September, 1913		75.00
9-30	10791	The Horseman, advertising speed program, 1913		196.08
9-30	10792	Register & Leader Company, display advertising, 1913		497.66
9-30	10793	Iowa Trust & Savings Bank, protested sight draft, At Last Washer Co., Perry, Iowa, machinery department		18.06
9-30	10794	Des Moines Water Co., water bills, April-August, inclusive, 1913		778.73
10- 2	10795	Al Warnock, rent on binder for cutting crops, rental grounds		5.00
10- 2	10796	Joe Head, blacksmith work, grounds		6.79
10- 2	10797	J. L. Moyer, storage hog crates, 1913 fair		10.00
10- 2	10798	J. L. Moyer, 50 5-8 bushels oats, forage department		18.73
10- 2	10799	Cressey & Wingate, 29 flags, grounds		32.17
10- 2	10800	J. F. Summers, superintendent, correction pay roll account		283.90
10- 3	10801	Sestier Bros., contract hauling manure, 1913 fair		275.00
10- 3	10802	W. S. Frazier & Co., charges return of 2 sulkies, used by speed department		2.62
10- 3	10803	The Solvay Process Co., 6,000 pounds calcium chloride for race track		45.00

Date	No.	To Whom Issued		Amt.
10- 4	10804	R. S. Johnston, per diem and mileage, auditing committee meeting		27.80
10- 4	10805	A. R. Corey, Secretary, pay roll, folding Greater Iowa, October issue:		
		Theo Waltz, 1¼ days @ $1.00	$ 1.25	
		Frank Blake, ¾ day @ $1.00	.75	
		Clark Andrews, 1¼ days @ $1.00	1.25	
		Arthur Holman, ¾ day @ $1.00	.75	
		Clarence Johnson, ¾ day @ $1.00	.75	
		Thurie Engstrom, 2-5 day @ $1.00	.40	
		Wm. Strom, ¾ day @ $1.00	.75	
		Bryan Winterod, ¼ day @ $1.00	.25	
		Lester Miller, 2-5 day @ $1.00	.40	
		Perry Ridenour, 1 4-5 days @ $1.25	2.25	
		Urban Portel, 7-10 day @ $1.00	.70	
		Eunice Conway, 1 2-5 days @ $1.00	1.40	10.90
10- 4	10806	Iowa State College, prorata expense, college exhibit		595.62
10- 4	10807	Chamberlain Hotel, hotel bill, I. S. Mahan, Oklahoma state fair		8.00
10- 4	10808	S. Fleming, refund exhibitor's ticket and pen rent, swine department		9.00
10- 6	10809	H. C. Mehring, refund exhibitor's ticket and pen rent, swine department		10.00
10- 6	10810	Fred Sievers, refund pen rent, swine department		3.00
10- 6	10811	S. P. Freed, refund pen rent, swine department		5.00
10- 6	10812	Adams Express Company, express bills, July and August, 1913		28.65
10- 6	10813	American Express Company, express bills, July, 1913		12.92
10- 6	10814	American Laundry Company, laundry bills, dining room and duck suits, night show, stock pavilion		3.83
10- 6	10815	B. M. Boyer & Son, refund exhibitor's ticket and pen rent, swine department		7.00
10- 6	10816	H. V. Bright, two turnstiles and choppers and repairs on registers		267.30
10- 6	10817	Brinsmaid & Co., 1000 plates, horticultural department		45.83
10- 6	10818	Bushnell Tank Works, 6 quick feeders		150.00
10- 6	10819	Beckman Bros., pipe and fittings, grounds		134.27
10- 6	10820	Jno. A. Burris, engineering services, grounds		26.25
10- 6	10821	W. H. Brereton, brick for horse barns, closet and game preserve		26.15
10- 6	10822	Bishard Bros., printing		32.00
10- 6	10823	Bureau of Advertising, five forms multigraph letters		9.70
10- 6	10824	E. L. Beck, expense account, poultry department		8.15
10- 6	10825	Mark D. Batchelder Co., 1 month advertising service, street cars		70.50
10- 6	10826	Backman Sheet Metal Works, sheet metal work for grounds, 1913		407.71
10- 6	10827	Blue Line Transfer Co., freight and drayage, June, July and August		31.38
10- 6	10828	Carbon Coal Co., coal for dining hall boilers, 1913 fair		30.22
10- 6	10829	Central Iron Works, 100 lawn seats, grounds		190.00
10- 6	10830	Chase & West, mattresses, beds and springs		26.85
10- 6	10831	Citizens Electric Co., 2 16-inch fans		36.00
10- 6	10832	"Courtright," 2 photos for Greater Iowa		1.00
10- 6	10833	Chase & West, refund on tickets		1.00

Date	No.	To Whom Issued	Amt.
10- 6	10834	Capital City Plumbing Co., settlement plumbing contract new closet, horse barn	600.00
10- 6	10835	Forage department, feed furnished to poultry and admissions departments	107.10
10- 6	10836	Capital City Printing Plate Co., 484 1-inch electros	50.10
10- 6	10837	Des Moines Stationery Co., office supplies	2.85
10- 6	10838	Des Moines Daily News, advertising for bids, Women and Children's building, cement walks and storm sewer	13.86
10- 6	10839	Des Moines Paper Box Co., 1600 mailing tubes	20.00
10- 6	10840	Des Moines Water Co., water bills, September, 1913	136.03
10- 6	10841	A. J. Doleschal, refund exhibitor's ticket, dairy department	2.00
10- 6	10842	Des Moines Tent and Awning Co., rental tents, cots, bedding, etc.	546.90
10- 6	10843	Des Moines Capital, one year subscription and advertising for bids on sewer, Women and Children's building, and grading	25.25
10- 6	10844	Des Moines Electric Co., 2 8-inch fans	18.00
10- 6	10845	Des Moines Fly Trap Co., 50 fly traps	37.50
10- 6	10846	Des Moines Fuel and Lime Co., cement for grounds	80.00
10- 6	10847	Des Moines Broom Co., 5 dozen brooms, grounds	15.00
10- 6	10848	S. Davidson Bros., furniture Babies' Health contest and rent on piano, Administration building	29.71
10- 6	10849	Des Moines Rubber Stamp Works, police stars and rubber stamps	34.85
10- 6	10850	Downing electrical Co., telephone and light line supplies	463.46
10- 6	10851	Empire Cooping Co., pens for poultry building	211.70
10- 6	10852	Federal Printing Co., 300 tablets for boys' judging contest	10.30
10- 6	10853	Pabst Stock Farm, refund special premium money	100.00
10- 6	10854	Ferguson Printing Co., miscellaneous printing	12.00
10- 6	10855	J. E. Graff, drugs, rest cottage	5.55
10- 6	10856	Green Foundry and Furnace Works, 2 meter rings and 1 meter cover	7.50
10- 6	10857	Globe Machinery and Supply Co., pipe and fittings	27.06
10- 6	10858	Garfield Clothing Co., ties for boys' camp	13.10
10- 6	10859	Enos B. Hunt, Jr., 4,000 post cards for advertising	20.00
10- 6	10860	Hawkeye Transfer Co., 3 scrapers, grounds	15.75
10- 6	10861	The Homestead Co., engraving	54.72
10- 6	10862	The Homestead Co., printing	332.25
10- 6	10863	Heilhecker Printing Co., night show and judging programs	68.25
10- 6	10864	Iowa Lithographing Co., premium and expense warrants	25.00
10- 6	10865	Iowa Press Clipping Bureau, 6 months clipping service	24.00
10- 6	10866	International Register Co., 3 second hand registers	30.00
10- 6	10867	International Harvester Co., 1 self dump rake and machinery repairs	27.75
10- 6	10868	Iowa Seed Co., plants and flowers, grounds	68.73
10- 6	10869	Chas. Koenigsberger, harness repairs and arm numbers	25.90
10- 6	10870	L. H. Kurtz & Co., supplies canning school, exhibit	28.05
10- 6	10871	McNamara-Kenworthy Co., office supplies	53.28
10- 6	10872	Matthews Carriage and Auto Co., implement repairs	2.15
10- 6	10873	Merchants Transfer Co., transfer and freight bills, July and August, 1913	40.15
10- 6	10874	Boone Printing Co., balance on printing bills, 1913	118.75

Date	No.	To Whom Issued	Amt.
10- 6	10875	O'Donnell Ptg. Co., printing poutry department	10.50
10- 6	10876	W. V. Palmer, services concession department, 1912	20.00
10- 6	10877	Potts Bros., cement furnished at grounds, 1913	124.00
10- 6	10878	C. C. Prouty, ground supplies	17.40
10- 6	10879	Pratt Paper Co., 50,750 envelopes, Greater Iowa	50.75
10- 6	10880	Postal Telegraph Co., messages, August, 1913	3.10
10- 6	10881	Rapid Addressing Machine Co., supplies addressing machine	12.57
10- 6	10882	Red Line Transfer and Storage Co., loading boiler and engine, light plant	102.00
10- 6	10883	Remington Typewriter Co., Monarch typewriter and record ribbon	86.75
10- 6	10884	Register and Leader Co., job printing, 1913	227.20
10- 6	10885	Register and Leader Co., engraving 1913	64.80
10- 6	10886	Register and Leader Co., advertising for bids on sidewalks, sewer, grading and Women and Children's building	33.23
10- 6	10887	Dr. Chas. Ryan, hospital furnishings	28.30
10- 6	10888	Chas. Rhinehart, expense leader stock parade	1.50
10- 6	10889	O. O. Smith, architect fees, horse barn, closet	54.00
10- 6	10890	Star Engraving and Printing Co., job printing	8.50
10- 6	10891	Savery Hotel Co., hotel bills, judges swine department	17.90
10- 6	10892	Seick Tent and Awning Co., 5 drop curtains and rent on tents, cots, bedding, etc., 1913	590.80
10- 6	10893	B. F. Swanson Co., mimeograph supplies	66.60
10- 6	10894	E. C. Snyder, 17 sets of numbers, misc. departments	31.00
10- 6	10895	Talbot-Eno Co., 2500 post cards, publicity department	8.50
10- 6	10896	Tolman Print Co., 200 window cards	58.00
10- 6	10897	J. R. Underwood, veterinary services, mule team, grounds	6.00
10- 6	10898	U. S. Express Co., express bills July and August, 1913	50.32
10- 6	10899	Underwood Typewriter Co., 3 weeks rental on Typewriter	3.00
10- 6	10900	Wilcox-Howell-Hopkins Co., premium ticket sellers' bonds	45.00
10- 6	10901	Wallaces' Farmer, job printing, 1913	662.85
10- 6	10902	Wells Fargo Co., express bills, July and August, 1913	31.83
10- 6	10903	Welsh & Carlson, 8 new shoes, mules	4.00
10- 6	10904	Western Union Telegraph Co., messages July and August, 1913	69.05
10- 6	10905	Matilda Winterrowd, rent 9 acres ground north of race track	81.00
10- 6	10906	Western Newspaper Union, 6 reams paper for tables, agricultural hall	15.36
10- 6	10907	J. S. Wilson Floral Co., plants and flowers	328.81
10- 6	10908	Whitehead-Hoag Co., 500 watch fobs, implement dealers' day	35.00
10- 6	10909	Edith R. Wasson, 1 form multigraph letter	2.00
10- 6	10910	Graber and Cavender, supplies school exhibits department	9.09
10- 6	10911	Chase Bros., supplies school exhibits department	14.60
101 6	10912	Geo. B. Grimes, supplies school exhibits department	11.45
10- 6	10913	The Hulsizer Co., decorations school exhibits department	11.80
10- 6	10914	Koch Bros. Co., office supplies, etc	14.55
10- 6	10915	Chas. W. Rogg & Co., supplies school exhibits department	1.56

Date	No.	To Whom Issued		Amt.
10- 6	10916	R. F. Hildebrand, 205 prints and photos and 2 panoramas, 1913 fair		247.50
10- 6	10917	O'Dea Hdw. Co., hardware bills, 1913		676.04
10- 6	10918	Iowa Pipe and Tile Co., pipe fittings and tile		187.82
10- 6	10919	Standard Glass and Paint Co., glass, paint and brushes		480.55
10- 6	10920	W. S. Corse, refund special premium money		80.00
10- 7	10921	L. H. Kurtz, postmaster, postage		20.00
10-10	10922	E. M. Wentworth, expense attending Minn. State Fair		22.42
10-11	10923	J. F. Summers, superintendent, correction pay roll concession department		15.00
10-11	10924	W. B. Barney, superintendent, correction pay roll dairy department		3.00
10-11	10925	E. C. Bishop, superintendent, correction pay roll school exhibits department		4.50
10-11	10926	J. H. Queal & Co., lumber bill, 1913		1,902.96
10-11	10927	A. Olson, cleaning pens, office, bath room, etc., swine pavilion		30.00
10-13	10928	A. R. Corey, expense attending American Royal Live Stock Show, Kansas City		22.55
10-13	10929	O. W. Mullen, advertising Pocahontas county, 1913		10.00
10-13	10930	W. J. Seivers, advertising Buena Vista county, 1913		30.00
10-13	10931	W. C. Treloar, advertising Boone county, 1913		15.00
10-13	10932	A. R. Corey, Secretary, pay roll No. 20 (grounds), September 28-October 11th:		
		H. F. Deets, labor on grounds, 12 days @ $3.00	36.00	
		Geo. Whitney, foreman, 4½ days @ $2.75	11.37	
		Theo Broerman, labor on grounds, 6 days @ $1.75	10.50	
		I. J. Whitmer, labor on grounds, 11 days @ $2.00	22.00	
		M. Burnett, labor on grounds, 11 days 5 hrs. @ $2.00	23.00	
		Jno. Kalny, labor on grounds, 11 days @ $2.00	22.00	
		Jno. Olson, labor on grounds, 10 days @ $2.00	20.00	
		Geo. Mizner, labor on grounds, 10 days @ $2.00	20.00	
		Chas. Daughenbaugh, labor on grounds, 10 days @ $2.00	20.00	
		Walter Hunt, labor on grounds, 11 days @ $3.00	33.00	
		Fred Myers, labor on grounds, 8 days @ $4.00	32.00	
		Dave Wright, labor on grounds, 12 days @ $2.00	24.00	
		A. Lammey, labor on grounds, 4½ days @ $4.00	18.00	
		Chas. Morrison, labor on grounds, 12 days @ $3.50	42.00	
		Jno. Brown, labor on grounds, 10 days @ $4.00	40.00	
		Hoyt Woodward, labor on grounds, 11½ days @ $4.00	46.00	
		Henry Grandgeorge, labor on grounds, 2½ days @ $2.50	6.25	
		H. R. Wilson, labor on grounds, 3 days @ $2.00	6.00	432.12

Date	No.	To Whom Issued	Amt.
10-15	10933	Iowa Telephone Co., exchange service and toll bills	33.93
10-15	10934	J. E. Lovejoy, first estimate, general contract, Women and Children's building	15,000.00
10-15	10935	L. H. Kurtz, postmaster, postage, September issue Greater Iowa	8.38
10-15	10936	O. O. Smith, payment on architect fees, Women and Children's building	150.00
10-15	10937	E. M. Reeves, expense attending Minnesota State Fair	17.60
10-15	10938	Gus Strohmeier, advertising Sac county, 1913	15.00
10-15	10939	Langan Bros. Company, office and ground supplies	341.08
10-15	10940	McCray Sign Shop, signs, etc., 1913, first payment	96.50
10-15	10941	McCray Sign Shop, signs, etc., 1913, second payment	45.25
10-15	10942	Shannon & Mott, balance mill feed bill, forage department, 1913	217.58
10-16	10943	Joe Head, shoeing mule team	6.50
10-16	10944	Globe Machinery and Supply Co., pipe fittings	3.00
10-18	10945	Joe McCoy, advertising, Warren county, 1913	10.00
10-18	10946	R. & E. Warren, 25 tons 595 lbs. clover hay, forage department	227.67
10-21	10947	C. E. Cameron, expense attending American Royal, Kansas City	38.59
10-21	10948	Iowa Telephone Co., toll bills, Ames station	.25
10-21	10949	T. J. Hudson, advertising Madison county, 1913	15 00
10-21	10950	S. Joseph & Sons Co., premium cup, guest buttons and officers' badges	221.25
10-21	10951	Bishard Bros., 300 futurity lists	33.75
10-21	10952	Bastian Bros. Co., premium ribbons	715.12
10-21	10953	McCutcheon & Verran Co., insurance premiums	189.26
10-21	10954	Wilcox-Howell-Hopkins Co., insurance premiums	544.00
10-21	10955	Witmer & Kauffman, insurance premiums	496.46
10-24	10956	Pease Hay Commission Co., alfalfa hay. forage department	158.48
10-24	10957	McDonnell Boiler & Iron Works, boiler repairs, Administration building	142.00
10-25	10958	C. E. Cameron, per diem and mileage, executive committee meeting	34.00
10-25	10959	O. A. Olson, per diem and mileage, executive committee meeting	35.50
10-28	10960	Iowa State College, second estimate pro rata expense, college exhibit, 1913	200.56
10-28	10961	American Association of Fairs and Expositions, annual dues, 1913	25.00
10-29	10962	C. F. Momyer, advertising Mahaska county. 1913	15.00
10-31	10963	A. R. Corey, salary, secretary, October, 1913	183.33
10-31	10964	H. N. Whitney, salary, superintendent publicity, October, 1913	166.66
10-31	10965	Elsie Colton, salary, chief clerk division horse breeding, October, 1913	100.00
10-31	10966	Edith K. Smith, salary, general stenographer, October, 1913	85.00
10-31	10967	C. A. Nash, salary, assistant secretary, October, 1913	125.00
10-31	10968	J. H. Deemer, superintendent grounds, salary, October, 1913	100.00
10-31	10969	H. N. Whitney, expense running moving pictures at Admen's club, Des Moines	2.00
10-31	10970	Minnie Truax, salary, stenographer, publicity department, October, 1913	75.00
11- 3	10971	Wib F. Clements, refund entry fee, poultry department	4.25

Date	No.	To Whom Issued		Amt.
11- 7	10972	A. R. Corey, Secretary, pay roll No. 21 (grounds), October 13-27:		
		H. Grandgeorge, labor on grounds, 9 days @ $2.50	$ 22.50	
		M. Burnett, labor on grounds, 10 days @ $2.00	20.00	
		W. R. Wilkins, labor on grounds, 3 days @ $2.00	6.00	
		H. F. Deets, labor on grounds, 12 days @ $3.00	36.00	
		I. J. Whitmer, labor on grounds, 10 days @ $2.00	20.00	
		Jno. Olson, labor on grounds, 9 days @ $2.00	18.00	
		Geo. Mizner, labor on grounds, 10 days @ $2.00	20.00	
		Jno. Kalny, labor on grounds, 10 days @ $2.00	20.00	
		Hoyt Woodward, labor on grounds, 4 days @ $4.00	16.00	
		Jno. Brown, labor on grounds, 6 days @ $4.00	24.00	
		Chas. Daughenbaugh, labor on grounds, 9 days @ $2.00	18.00	
		Dave Wright, labor on grounds, 12 days @ $2.00	24.00	
		Chas. Morrison, labor on grounds, 11 days @ $3.50	38.50	
		G. E. Whitney, foreman, 2½ days @ $2.75	6.87	
		Fred Meyers, labor on grounds, 7 days @ $4.00	28.00	317.87
11- 7	10973	A. R. Corey, secretary, pay roll folding Greater Iowa, October issue:		
		Clarence Johnson, 1 day @ $1.00	$ 1.00	
		Eunice Conway, 1 day @ $1.00	1.00	
		Perry Ridenour, 1 day 4 hrs. @ $1.25	1.75	
		Urban Portel, 1 day 4 hours @ $1.00	1.40	5.15
11- 7	10974	County newspaper advertising, second payment		59.68
11- 8	10975	Wheaton Express and Transfer Co., cartage on mail and advertising matter		9.75
11-11	10976	A. R. Corey, secretary, pay roll No. 22 (grounds), October 27-November 8, inclusive:		
		H. F. Deets, foreman, 8 days @ $3.00	$ 24.00	
		M. Burnett, labor on grounds, 1¾ days @ $2.00	3.50	
		Jno. Olson, labor on grounds, 7 days @ $2.00	14.00	
		H. Grandgeorge, labor on grounds, 4 days @ $2.50	10.00	
		Jno. Kalny, labor on grounds, 8¾ days @ $2.00	17.50	
		Geo. Mizner, labor on grounds, 11¾ days @ $2.50	23.50	
		Chas. Daughenbaugh, labor on grounds, 6¾ days @ $2.00	13.50	
		Fred Meyers, labor on grounds, 11¾ days @ $4.00	47.00	
		Dave Wright, labor on grounds, 12 days @ $2.00	24.00	
		John Brown, labor on grounds, 10¾ days @ $4.00	43.00	
		Chas. Morrison, labor on grounds, 10 days @ $3.50	35.00	
		I. J. Whitmer, labor on grounds, 11¾ days @ $2.00	23.50	
		Geo. Whitney, foreman, 2 days @ $2.75	5.50	284.00

Date	No.	To Whom Issued		Amt.
11-13	10977	Union Insurance Co., insurance premiums		209.00
11-13	10978	C. E. Cameron, per diem and mileage, Executive Committee meeting		30.00
11-13	10979	O. A. Olson, per diem and mileage, Executive Committee meeting		31.50
11-14	10980	Wayland C. Ballard, insurance premiums		382.50
11-14	10981	Jno. C. Christie Co., insurance premiums		373.87
11-14	10982	Willcox-Howell-Hopkins Co., balance on insurance premiums		100.00
11-17	10983	J. E. Lovejoy, second estimate contract Women and Children's building		9,270.00
11-17	10984	Des Moines Daily News, balance advertising account, 1913		25.00
11-17	10985	G. S. Gilbertson, treasurer's salary for 1913		100.00
11-19	10986	W. S. Allen, secretary, 10,000 1913 auto plates, used for shingles		10.00
11-19	10987	American Express, express bills, August, September, October, 1913		10.10
11-19	10988	Brinsmaid & Co., dishes, silverware and kitchen utensils, club dining hall		29.09
11-19	10989	Thos. Downing, D. V. S., stallion examination		10.00
11-19	10990	Des Moines Water Works Co., water bills, October, 1913		22.20
11-19	10991	The Homestead Co., engraving		13.52
11-19	10992	The Homestead Co., printing insurance riders		5.00
11-19	10993	Iowa Telephone Co., toll bills and exchange service		5.98
11-19	10994	Koch Bros. Printing Co., books		2.50
11-19	10995	L. H. Kurtz, postmaster, October issue Greater Iowa		5.66
11-19	10996	McNamara-Kenworthy Co., figuring book		.75
11-19	10997	Merchants Laundry, laundry bills, club dining hall		.64
11-19	10998	Postal Telegraph Co., message, concession department		.25
11-19	10999	Pratt Paper Co., wrappers Greater Iowa		3.24
11-19	11000	Register and Leader Co., engraving		18.15
11-19	11001	U. S. Express, express bills, September and October, 1913		2.20
11-19	11002	Western Union Telegraph Co., messages, September, 1913		3.22
11-19	11003	Younker Bros., bunting, outing flannel and toweling		17.06
11-24	11004	A. R. Corey, secretary, pay roll No. 23 (grounds), November 9-22, inclusive:		
		H. F. Deets, labor on grounds, 9½ days @ $3.00	$ 28.50	
		I. J. Whitmer, labor on grounds, 9½ days @ $2.00	19.00	
		Geo. Mizner, labor on grounds, 9½ days @ $2.00	19.00	
		Chas. Daughenbaugh, labor on grounds, 9½ days @ $2.00	19.00	
		Fred Myers, labor on grounds, 10½ days @ $4.00	42.00	
		Jno. Brown, labor on grounds, 9½ days @ $4.00	38.00	
		Dave Wright, labor on grounds, 9½ days @ $2.00	19.00	
		H. Grandgeorge, labor on grounds, 12 days @ $2.50	30.00	
		Jno. Kalny, labor on grounds, 11¾ days @ $2.00	23.50	
		Jno. Olson, labor on grounds, 8 days @ $2.00	16.00	
		Chas. Morrison, labor on grounds, 10 days @ $3.50	35.00	
		Jas. Beck, labor on grounds, 5 days @ $2.50	12.50	
		H. D. Stouffer, labor on grounds, 8½ days @ $3.00	25.50	
		N. Williams, labor on grounds, 5 days @ $2.50	12.50	
		Geo. Whitney, foreman, 4 days @ $2.75	11.00	
		E. A. Snow, labor on grounds, 4 days @ $3.00	12.00	
		Walter Hunt, labor on grounds, 5 days @ $3.00	15.00	377.50

Date	No.	To Whom Issued	Amt.
11-24	11005	S. Joseph & Sons, engraving and express on cups, two watches, premiums dairy department..........	71.77
11-24	11006	Robt. F. Hildebrand, 8 photos	4.00
11-24	11007	Wallaces' Farmer, printing September and October issues Greater Iowa	282.75
11-24	11008	Standard Chemical Co., supplies babies' health contest	2.20
11-24	11009	Joe McCoy, 7 days asst. supt. horse department......	28.00
11-24	11010	T. C. Legoe, per diem and mileage, auditing committee meeting	20.50
11-24	11011	Koch Bros. Printing Co., 1 loose leaf binder.........	7.50
11-24	11012	Wells Fargo Express Co., express bills, September, October, 1913	1.20
11-24	11013	Standard Glass and Paint Co., window glass	27.28
11-24	11014	Globe Machinery and Supply Co., inspecting boiler..	1.60
11-24	11015	Goodwin Tile & Brick Co., cement blocks and tile....	42.82
11-24	11016	Hawkeye Transfer Co., machinery repairs..........	4.15
11-24	11017	J. H. Queal & Co., lumber	35.73
11-24	11018	Iowa Pipe and Tile Co., pipe and supplies	107.49
11-24	11019	Iowa Telephone Co., labor and material on fair ground lines, 1913	165.79
11-26	11020	Purcell Printing Co., printing premium list, 1913......	1,244.00
11-26	11021	Goodwin Tile and Brick Co., tile and junctions.......	4.56
11-29	11022	A. R. Corey, salary, secretary, November, 1913......	183.33
11-29	11023	H. N. Whitney, salary, supt, publicity, November, 1913	166.66
11-29	11024	C. A. Nash, salary, assistant secretary, November, 1913	125.00
11-29	11025	Elsie Colton, salary, chief clerk Div. Horse Breeding, November, 1913	100.00
11-29	11026	J. H. Deemer, salary, supt. grounds, November, 1913..	100.00
11-29	11027	Edith K. Smith, salary, stenographer, November, 1913	85.00
11-29	11028	Minnie Truax, salary, stenographer publicity department, three weeks	56.25
		Total	$157,870.68
		Premiums paid by premium warrants 10607-11561, inclusive	61,069.90
		Grand total disbursements.....................	$218,940.58

The President: I will say, gentlemen, that so far as the reports made by the Secretary and Treasurer are concerned, it is not necessary for us to take any action upon that, for the reason that the law provides that the expert accountant of the state examines the books of the Secretary-Treasurer of this association.

Gentlemen, it affords me great pleasure this morning to present to you a man who I know is intensely interested in the work which we are trying to do in the state of Iowa, and I think you will bear me out in that assertion—you gentlemen who heard the remarks last night. I can not add anything to the introductory remarks made by the president of the county and district fair managers association of this state. I simply want to indorse them. I want to introduce to you this morning, gentlemen, a man who is intensely interested in the state and county fairs of Iowa, Governor Clarke.

ADDRESS BY GOVERNOR CLARKE.

Governor Clarke: I hardly know how it happened that I got on the program last night and also today. When Mr. Corey wanted to know whether I would undertake to talk a while I said I would. Then someone else asked me if I would speak briefly, I again said yes. Well, one of these gentlemen was talking about one meeting and the other about another, but I thought they were referring to the same meeting, the meeting last night. I had no idea, until I saw the program, that I was getting into two different meetings for the discussion of practically the same subjects.

I see here this morning quite a number who were in the meeting last night. I said all I knew then, and perhaps something I didn't know, about district and county fairs, and gave you something of my ideas of what they ought to be. This meeting, as I understand it, is more particularly with reference to the State Agricultural Society, and the State Fair. This morning I have been examining the report which has just been filed in my office by the State Accountant with reference to the Agricultural Society, especially with reference to the State Fair, and I am very much gratified at the contents of it. I do not know whether you are all familiar with that report, or whether it has been submitted to you yet or not; but I want to call attention to some of the figures that occur in it. It is very encouraging, and I want to say to you that when the president says that I am very much interested in the county fairs, and in the success of this great institution over here that we call the Iowa State Fair, he speaks the truth. I am. I do not believe, aside from our educational institutions themselves, there is a greater educational force in the state than the Iowa State Fair. I look upon it and regard it as a great educational institution. That is what it ought to be. It is of great value to the people of the state simply as an educator, in giving them an idea of what is going on in the world, what is possible in the world, what is possible with reference to our material interests. I think that no man who goes over the grounds during our State Fair can go away without feeling that he has acquired a large fund of information that he has added to his general information of conditions in this State and in the country at large.

The accountant's report refers to an original appropriation that was made for the State Fair of $50,000 as a starter, if I may so express it. The report further says that some frame buildings were built out of that $50,000 as a beginning. It says that since 1902 there have been permanent buildings erected, and grounds bought to the amount of $419,000. That means from appropriations made by the state of Iowa, as I understand the report. In other words, that there has been an appropriation through these years of, on an average, $38,091 per year to the development of this great institution that we call the State Fair. There were some objections to these appropriations in the general assemblies where they were considered but I do not believe that there is a man who was a member of the legislature, or who was a member of the appropriations committee of either house who recommended these appropriations, that would for a single instant raise a voice in protest now. You have no doubt noticed, gentlemen, that while everything always goes forward under protest, that there is always opposition to every move forward, it does not make any difference what it is, yet when the thing itself is accomplished for the public good, every man who has opposed eventually falls in line and says that it was a fine thing to do. May I not ask you, with reference to your educational institutions, when protests have gone up against the policy of the legislature with reference to them, is there a man now anywhere in Iowa who will visit our educational institutions, our great institution here at Ames that is absolutely of incalculable value to this state,—is there a man now who goes there, through these buildings, over that campus, investigates and sees the work that is being done there, sees what it has been to the state of Iowa, what it will be in the future, in its extension courses, and every other way; is there a man anywhere that will say that what was done ought not to have been done? Is there a man who will go to the great university of this state and see what is there, the hundreds, even thousands of young men and women who are receiving an education there, a university which will now begin to compare in value and the extent of its work with any other in the Mississippi Valley; is there a man who will now say that the appropriations of the legislature that were made in behalf of that institution ought not to have been made? I want to say, gentlemen, that within ten or twelve years this state has made its educational institutions. It has made both of these institutions that I have referred to. It has made the institution down at Cedar Falls within eleven years. More than eleven millions of dollars have gone into these institutions in the last twelve years and the people of this state, I think, are proud of the fact that this has been done. Iowans do not want to live in a state that is behind any other state. Iowa does not want a state that is not equal in educational advantages to any other state. There is no state that is richer in the present, or in its prospects for the future than Iowa is. And let us have a state, gentlemen, that stands upon the very edge of the future that can say to any other state in the Union. "You are not ahead of us in all that goes from human welfare and human good." That is the kind of a state we ought to have, and that is the kind of a state that we are proud of. During the ten or twelve years in which we have made these educational institutions, we have also made that other great institution, the State Fair, which is educational, where the people of the state of Iowa may gather year after year for a week and study the advantages that may be brought to the state through the institution that we call the State Fair. There you see the inventive genius of man in all sorts of machinery, and especially in agricultural machinery which is such a potent factor on the farms of the state. There is seen what Iowa has produced. There is seen the finest of the fine animals of the state. There is an incentive and stimulus to the people to go forward; there is an inspiration. And I tell you that a man without an inspiration, the man without a vision of what this state ought to be, or what its people ought to be, I would almost say, is hardly worthy of being a citizen of such a state as Iowa. Every man ought to have a vision not only of what this state is now, but what it is to be in the years that are to come, when the population of millions that I spoke of last night will be here. We as citizens of the state ought to be laying the foundations now for the necessities of the years that are to come, that will be pressed upon us and demanded of our soil and of our people. We ought to be getting ready, and the Fair is a help in getting ready for these coming years.

That plant over there, this report says, is valued at $1,122,923, nearly a million and a quarter of dollars. I think that probably the total investment of the state made in lands, as I get it from another report, is $70,000 in the bare land that was originally purchased. I want to call your attention to these things for the purpose of showing that your legislature and your public men have not been making mistakes in investments, for the investments that they have made have doubled over and over again. When I was at Iowa City as a student, lands and lots down there could have been bought for a song as compared with what they are worth now. A few years ago the legislature of this state declined to purchase some land there this side of the Iowa River for enlarging the university grounds when it could have bought it at a very reasonable price; but today, as I ascertained when I was there a week or so ago, it would cost three times as much money. It would have been a fine investment for the state of Iowa to have purchased it at that time. Your legislature has never made an investment or purchase that has not doubled over and over again in value. So I say, the legislatures of this state have been wise. Criticism falls upon legislators, very frequently. Actually, before the organization of a general assembly sometimes, criticism begins to fall upon members for what they might possibly do, or for mistakes that they may possibly make. Our people elect a man to the legislature because of his honesty, his integrity, his ability, his worth as a citizen. That worth, and that ability and that integrity do not change in him on the way down here from his home, but he goes into the legislature the same trusted man, the same man of integrity, loving the state and wanting to do what is for the public welfare. And after the storm has gone by and the history of these legislatures is written, the state of Iowa is ready to rise up and say what they did was wise, it was right. We are now reaping the benefits of the wisdom of the men who are gone, and the time will come when we will reap the benefits of the legislature now in session, and will praise its work as we praise the work of those who have gone before.

Nor has there been, there never has been in Iowa, I think, an investment or an enlargement of any of her institutions that any man in Iowa now criticizes. ' We ought before condemning to get hold of the facts, understand fully the facts. A man who undertakes to solve a problem without getting a strong grasp on the facts and all the circumstances surrounding it, is apt to make mistakes. When he gets hold of the facts, knows all the circumstances surrounding the proposition, he will not be very apt to reach a wrong conclusion. These men managing the Fair do have, and have every opportunity to have. But I said something about the value of that plant and the money that had gone into it. The report that was laid on my desk yesterday with reference to that institution shows a profit or a surplus to the state of Iowa, of $653,923—getting up towards three quarters of a million of dollars under the management of the State Fair Board. That surplus, of course, is seen in buildings that have been erected and in other directions. I call your attention to these things to indicate to you that the management has been wise and honest, and not subject to the criticism that we sometimes hear of men who stand at the management and head of an institution like the Agricultural Society and the State Fair. A management that can show a surplus—a profit in buildings and otherwise of nearly three quarters of a million dollars has not been a failure but a success, and the fact ought to be heralded over the state so that the people may see and know what that great institution has done, in an educational way, in bringing wealth to the people of the state, in adding to the investment the profits made in its management. I think the people ought to know these things. How prone we are to criticize, and how often we fail in commendation and praise. I believe that the man who manages successfully and with integrity and honesty and loses no dollar of the people's money, is entitled to praise, and I give unstinted praise this morning, and I am not afraid to do it anywhere. Always where praise is entitled to be made I shall not hesitate to give the praise and honor where honor is due. This report laid upon my table yesterday, shows, in the language of the report, "that for each dollar invested by the state there is $2.40 worth of property." Now what man of us, what man anywhere over the state of Iowa, has managed his business and can make any better showing than that, that for every dollar invested there is a showing of $2.40 as a return for it. I say that this is good, and I say that report ought to be heralded over the state, and the people ought to know of it. I feel a pride in calling your attention to it this morning. Now that is accounted for,—all this surplus—as I have said, by the thousands of dollars invested annually in permanent buildings and permanent improvements on the State Fair ground. There is carried $126,720 worth of fire insurance, and $161,200 worth of tornado insurance for the protection of the property of the state. We have 283 1-3 acres of land representing that great plant, and, as I said, all devoted to educational purposes. There is no greater educational force in Iowa than that institution, taking into consideration the length of time that it gives to the education of the people. Nowhere! I believe the young men and women of Iowa, who are to be the future citizens of this state, will be inspired and helped by visiting the State Fair every year. The man who never visits an institution like that, the man who never visits our educational institutions, who stays on his farm and does not come in touch with the fair and with the men who are managing such institutions and the good they are doing, can have no appreciation of the real situation. He is not competent to judge. He becomes a critic because of something he has heard. But let him go and see. I sometimes feel that if I could just march every citizen of this state through that great institution at Ames, or at Iowa City for instance, each man would come away, after having seen it, and after having seen the army of young men and young women preparing for the future citizenship of this state, saying, "I have no word of objection, I bid it God Speed." So with the institution at Cedar Falls. I wish the men and women of this state could see and investigate for themselves what is being done in Iowa for the public good and the public welfare. If they would a shout and storm of applause would go up all over Iowa in praise of these institutions and these men who are doing this work for the people and for human welfare everywhere. And so I take an interest and a pride in submitting these facts this morning.

I looked at the law to see what is really expected of the men who are managing this institution. The legislature re-writing the law a year or two ago, created what they called the Department of Agriculture. What is it for? The statute says it is for the promotion of agriculture and horticulture, forestry, animal industry, manufacture and domestic arts, embracing district and county agricultural societies. That is what this Department of Agriculture is for. It reaches out to every interest of men upon the farms,—the agricultural interests of this state, horticulture, forestry, manufacturing interests, and domestic arts. Is there anything that does not come within the purview of the Department of Agriculture? I wonder if you fully appreciate the powers and duties that are conferred upon you by the state, if you fully appreciate what the legislature meant and intended and wanted from the Department of Agriculture. The law says it shall be the duty of the Board to look after and to promote the interests of agriculture, the agricultural education, and animal and other industries throughout the state; to investigate all subjects relating to mechanical appliances, machinery, and the diversification of crops and products; to investigate reports of the prevalence of contagious diseases among domestic animals; the destruction of insects, grain and grasses and other reports, and report the results of the investigation. This Department of Agriculture is established and founded according to these provisions of the law, for the express purpose of helping conditions in Iowa agriculture in every way. That is what I tried to get at in the talk I tried to make last night, that these county and district fairs ought also to be an educational force if the thought and intention of the legislature is carried out; that they are to promote the interest of all these different industries and aid in putting the state upon a good, firm foundation with reference to them.

It is upon these things that the state is built. These are the things that are to make us great—agriculture, horticulture, forestry, animal industry. The law is plain that the Agricultural Department is to promote all of these things, and how better can they promote them than through this institution that we call the State Fair? There is constant improvement and bettering of conditions. I am not so very old, but I remember the day on the farm, and I was there until I was twenty-five years of age, when nobody saw such horses as we now see. There has been a wonderful development and improvement of animals. There has been something done in Iowa, something, well, I think it commenced when Darwin discovered the origin of species, and the facts of evolution became well known and adopted by the people throughout the whole country. They saw how, by careful selection, they could develop wonderfully along these lines. So they developed better and finer animals. Development and improvement everywhere in horticulture. Look at the roses, even, that we have in these days! They have been greatly improved. The old rose, you know, was not much of a rose at all. So we have had development all along the line, and all growing out of the patient, persistent work of men who have been connected with these affairs in Iowa and elsewhere. That is, where it all comes from—constant, persistent study and work all of the time.

But I have said enough. I have simply tried to suggest, that when you give yourself to this institution, and to the development of it, and to the real purposes of it as expressed in this law I have called attention to, it is a devotion to the very fundamental things that make this state great and are to make it greater in the future. A constant devotion to these things will make us still a richer and better state. I thank you.

The President: The next number on the program is Horse and Colt Shows. Gentlemen, it is not necessary for me to introduce to you a gentleman who can handle this subject, for I know that you all know him personally, but I do take pleasure in presenting to you, Prof. W. J. Kennedy of the Iowa State College.

Prof. W. J. Kennedy: Mr. Chairman and gentlemen: I do not intend to take up very much time this morning because it is getting rather late. The subject assigned to me is Horse and Colt Shows. Now I expect that the great majority of people are familiar with this line of work, but perhaps there are a few here who are not familiar with horse and colt show work as organized in Iowa.

Last year we had, in the State of Iowa, over eighty horse and colt shows that were separate and distinct from the county fair work. This year we will hold over one hundred horse and colt shows in over two-thirds of the counties in the state. I want to say that this horse and colt show work started in Iowa twelve years ago at the little village of Sheldahl, this side of Ames, where we had eight colts. Later on that show was transferred to Madrid. This work has gone on and on until this year we have held some colt shows in Iowa where we have had over one hundred colts on exhibition. In Henry county this year we had a show in the month of October, where we had one hundred and three colts. So far as I know that is the largest colt show that has been held in this state.

This colt show work has been extended until at the present time the shows include classes for one year olds, two year olds, brood mares and farm teams, and, in my judgment, this work in the future will take on more the form of a horse show. We will have classes for colts, yearlings, two year olds, brood mares and farm teams. In my judgment, two of the most important classes are those for farm teams and brood mares.

Last Saturday I judged a show at Alleman, a little town between Ames and Des Moines on the Interurban. We had an exceptionally good exhibit notwithstanding the fact that it rained all the night before, and until noon the next day. We had lined up there, fourteen farm teams weighing from three thousand to forty-two hundred pounds each. I want to tell you that it was a sight worth while for anyone to see. We had that same day in the class of brood mares, nineteen, and there were at least a dozen of those mares that weighed from eighteen hundred up. Now that is something you could not have found five years ago or ten years ago in that section. I know of sections today where these colt and horse shows have been held for ten or twelve years, where within a radius of five miles you can find at least twenty brood mares weighing over eighteen hundred pounds each. Horse buyers from New York City and Chicago have told me that in the vicinities where horse and colt shows have been held, the horses bring in the market today, twenty-five and fifty dollars more than in communities where such shows have not been held. I think that ultimately this work will be organized in every county in Iowa. The county leading today is Polk county. Polk county last year held seven shows. This year Polk county is to hold seven more shows. I know what the horses are in this county—what the classes of yearlings are, what the two year olds are, and the brood mares, and I want to tell you that there has never been a colt show or a horse show held in a community where it has not stimulated a greater interest in horses, a desire for better horses in that community.

How shall we organize? These shows are organized in different ways. I find that there is no one way which is best. One community will organize in connection with the Farmers Institute work. Polk county follows this method. At each one of these seven institutes held in Polk county there is one day devoted to the horse show. They also have domestic science, corn, sheep and cattle shows. Sioux county, Henry county, Sac county and a good many other counties are holding horse shows as a part of the Farmers Institute work. In some counties these shows are organized by horse breeders' organizations. The stallion owners put on the horse shows. In other communities it is the business men of the town who put on the shows. In other localities it is the bankers who handle the same. At Whiting, Iowa, the Whiting bank put on a horse show a year ago at which there were sixty-nine entries. I judged the same show this year, and it had one hundred seventy-five entries. I want to say that it was an exceptionally good show—one hundred seventy-five entries coming from four townships in one county, and they had on the grounds that day over two thousand people. It was held on a Saturday. Now I don't know as I could recommend any one way that is better than another for organizing, or any one way which would be the best. It is up to the men in your community to work out a plan for themselves. In organizing a horse show in a locality where you have never held one before, it might be well to start with a colt show, the second year you could include the yearling class, and the two year old class, because I think there is nothing so good as to try the judge out. He places the colts this year and then brings in the yearlings and two year olds and finally the mature animals. In this way you can find out whether the judge is right in his decision. I think that is one of the best features of these shows.

Now there is the question of financing these shows. The most successful shows have a large number of prizes. Some have as many as eight and ten premiums. The first premium might not be over seven or eight dollars. Sometimes they use merchandise for premiums. But the one thing that insures success in a colt show is a nice ribbon. A man may win two dollars, five dollars, or ten dollars, but he soon spends it. But you get a nice ribbon for a prize and he will keep it. I have gone back to these places where they have given nice ribbons, three or five years later, and found these ribbons hanging in the parlors. The people take pride in them and show them to their friends. Select good colors—a nice purple, for instance. Put up eight or ten prizes and you will have plenty of entries.

These horse shows have been held in September, October, November and December. They are holding them all four of these months, some of them preferring one month and others another. I think the best day of the week for holding these shows is Saturday. There is no other time like a Saturday afternoon, and there is no better place to hold a colt show than a small town. I know some larger towns where you could hold a successful colt show, but the thing to do is to get into the small town, say from five hundred or a thousand or fifteen hundred people. It is sure to be the only interest there, and the people will turn out to see the colt show. Take such places as Ankeny or Alleman or Elkhart, and every man, woman and child in the entire community attends.

If you were to hold these shows in a community and put up a lot of money and distribute these premiums, they would not be worth while. These shows must be strictly educational, and every colt that comes into that show, I don't care if there is forty-five in a class, should be rated by the judge and he should give his criticisms of each and every colt. This is a good thing, and often the man who does not win a prize gets the most out of it. He should know what is good about his colt and also what is undesirable. There is nothing that will weed a poor stallion out of a community quicker than a good colt show. I know that to be a fact.

In each and every locality, I don't care whether you have organized this show through the Farmers' Institute or the local business men, every owner of a stallion in his community ought to offer prizes for colts sired by his horse. These prizes are not, as a rule, cash prizes. They give them as service fees. It is a good thing for the man, it is good advertising, and it is good for the colt show. In my judgment there is no other line of work in Iowa, from a live stock standpoint, which has been as satisfactory from the standpoint of producing results as these colt and horse shows. They were started in Iowa, and have been copied by practically all the states of the Union. We have had letters in the last three or four years from thirty or forty different states, asking about the colt show work and copies of our premium lists. Illinois this year held about fifty colt shows patterned after the Iowa plan started some twelve years ago.

As I said before, there is no one best way of organization. This is something that each and every community will have to work out for itself. In my judgment, there is nothing that will do the horse industry in this state so much good as a well planned, and well conducted horse show or colt show. I would include classes for foals, yearlings, two year olds, brood mares and farm teams. There is nothing that does a young fellow so much good in a locality as being rewarded for taking care of his team and keeping it up. He takes pride in getting it ready for the show, and it furnishes an incentive for him to take good care of his horses. He will clean his harness up and drive in with his team hitched to the wagon. They should not be shown without a vehicle—not a light buggy, but a farm wagon. There is nothing that looks nicer than to see the teams all hitched to the wagons.

There never was a time in the history of this state when it was more important to keep good draft mares. There never was a time when it was more important to get really good draft sires than it is today. I often times wish that people in a good many communities could have some help in selecting stallions.

I feel I have taken up my share of the time. I want to say in conclusion that there is nothing, in my judgment, that would do the horse industry of Iowa more good than well managed horse or colt shows. If you have never held one start with the colt show first, and enlarge it as you go along. If you held a colt show this year, start in next year by putting in the older classes. I thank you.

The President: Now, gentlemen, that concludes our program for this morning, but we will invite you all back this afternoon to the afternoon session, which commences at 1:30 P. M. We will now stand adjourned until 1:30 P. M.

AFTERNOON SESSION

1:30 P. M., December 10, 1913.

Meeting called to order by President Cameron.

President Cameron: The first number of our program this afternoon is something which I am sure you are all interested in, and that is regarding our boys' camp that we have been having at the State Fair for the last two years. We will now have what is called the first prize essay, "What I Saw and Learned at the 1913 Iowa State Fair" by Floyd Sharp, Kossuth county:

WHAT I SAW AND LEARNED AT THE IOWA STATE FAIR.

In August, 1913, it was my privilege to be a member of the Boys' Camp at one of the greatest and best fairs of the greatest agricultural state in the Union; that is the Iowa State Fair and Exposition of the year Nineteen Hundred and Thirteen.

I arrived in Des Moines in the evening of August twenty-first, proceeded at once to the Administration building and registered. Thus began my first experience at a state fair.

Naturally, at first, there were so many wonderful things that one could not remember half of what was seen, but as the novelty wore off I began to notice and study the different exhibits.

The light work in the amphitheater and stock pavilion provided ample opportunity to witness the excellent races and performances on the stage in front of the grandstand and the splendid exhibition of horses and cattle in the pavilion.

The judging of stock in the pavilion gave one an idea of how to judge stock correctly. We learned what charactistics a horse should have to be a good carriage horse, what characteristics constitute a good saddle horse or driver, etc.

The stock judging contest for farm boys has an excellent and practical value as an educator in teaching boys the value of ability to judge stock correctly. The first prize, a scholarship to the Agricultural College at Ames, is worthy of the ambition of any boy and by perseverance and study every boy has a good chance to obtain it. To the boy who wins it new opportunities are opened and new fields of work and study lie before him.

Even to the boys who did not win a prize it afforded a practical and useful lesson in stock judging.

The exhibit of cattle showed that it pays to raise full blooded stock and to feed them scientifically and to keep them in barns which are perfectly sanitary, light and clean. The grade of stock at the fair showed the importance of scientific farming, which is taught at the agricultural college located at Ames.

There were representatives of almost every breed of cattle known, both of the beef and dairy type. Some of the specimens of the beef type were said to have weighed up to two thousand six hundred pounds. Among the dairy breeds there were many remarkable milk producers. Beyond a doubt, the scientific breeding and feeding of cattle is economical and produces great results.

The work of agricultural schools is becoming more prominent every year. Better methods of farming and stock raising are being brought out, new breeds of stock are being developed and new varieties of grain and forage crops are being perfected.

The different breeds of hogs were represented in the swine pavilion. They showed the results of good care and breeding.

The exhibit of horses contained excellent specimens of both the draft and carriage type. Among the former was Helix, who was the Grand Champion horse of America in the year nineteen hundred and ten.

At the races this year the state record was broken. A mile was paced in two minutes, five and one-half seconds.

The machinery exhibit is said to have covered sixty acres of ground. There were farm implements of every description, besides everything with which to equip a modern house or barn. In looking over the equipment for a modern barn one received a good conception of a clean, sanitary barn, and one which should be arranged so as to do away with much of the work of keeping it in order and tending to the stock. The machinery exhibited was designed for better and easier tilling of the soil, quicker and less expensive means of harvesting crops, for lightening the work around the barns and for convenience and comfort around the house.

Various types of silos had been erected on the grounds, which provided one with an opportunity to select one best suited to his needs and means.

A very interesting exhibit was that of the Iowa State College at Ames. An instructive feature of this exhibit was the dissected hog which was preserved in a glass case. It showed the action of various diseases, especially cholera, the knowledge of this disease and its prevention being of vast importance to the farmer who raises hogs.

Models of farmsteads were shown. They were a great help to farmers who wished to build economically and to have their buildings arranged conveniently. Many other interesting and instructive models were shown in this department.

To those interested in engineering or in building materials the engineering department contained many exhibits which were both instructive and wonderful. Various machines were used to test building materials such as brick, cement and others.

A wireless telegraph station was communicating with Ames and with receiving stations on the grounds.

They exhibited various engineering instruments and appliances, one of which was a blue printing machine which does away with all work of tracing.

There were many other things at the fair that served as an inspiration to the boys who saw them to become scientific farmers and to uplift and improve the conditions of rural life.

The inspiration, experience and the higher ideals of farm life received by being a member of the boys' camp at the Iowa State Fair are well worth the efforts expended by any boy to be able to attend the fair and the efforts of the State Fair officials and camp leaders in giving the boys a profitable and pleasant time.

After seeing the wonderful exhibits of stock, machinery and farm products one was filled with the desire to become a better farmer, to farm scientifically, and to have good stock and farms, to have fine crops and be able to have the different kinds of machinery, to uplift the conditions of rural life, to encourage scientific farming, and to help make better the State of Iowa which is already the best and greatest agricultural state in the Union.

President Cameron: We will now listen to the crop report and estimate for 1913 by Dr. Geo. M. Chappel:

Dr. Geo. M. Chappel: For lack of time and space I have condensed this report to the limit, but I think that I have all the facts on this little sheet, and after hearing this prize essay I hardly believe that all the farmers in the state have taken advantage of the boys' camp. They certainly know how to perform it.

Following is a summary of reports from crop correspondents of the Iowa Weather and Crop Service, showing the average yield per acre and total yields of staple soil products, and the average price at the nearest station, December 1, 1913.

In spite of many adverse conditions that prevailed during the season, Iowa has produced a full average crop of all soil products, except potatoes, and the value of the year's output is far in excess of any other year in the history of the state.

Corn.—The average yield per acre for the State is 34.9 bushels, making a total yield of 329,343,000 bushels, or 92,025,000 bushels less than last year. But the total value of the crop exceeds that of last year by $42,612,756. The average price per bushel at the nearest station on December 1st was 59 cents, making the aggregate value $194,311,370. The condition of the crop is fully up to the average and practically all of it has been harvested.

Oats.—The area harvested was 4,824,400; average yield, 34.2 bushels per acre; total yield, 164,851,000; aggregate value at 34 cents per bushel, $56,049,340. Last year the average yield was 44.4 bushels per acre; total yield, 206,949,700 bushels; average price 27 cents; total value, $55,876,419.

Spring Wheat.—Area harvested, 365,300 acres; average yield, 15.1 bushels per acre; total yield, 5,510,200 bushels; price per bushel, 75 cents; total value, $4,132,650.

Winter Wheat.—Area harvested, 505,740 acres; average yield per acre, 23.1 bushels; total yield, 11,693,900 bushels; average price 77 cents per bushel; total value, $9,004,303.

Barley.—Average per acre, 23.8 bushels; total yield, 8,756,300 bushels; average price, 53 cents; total value, $4,640,839.

Rye.—Average yield, 18.3 bushels per acre; total crop, 1,274,500 bushels; farm price, 59 cents; total value, $751,955.

Flax Seed.—Average per acre, 10.0 bushels; total product, 223,490 bushels; total value at $1.36 per bushel, $303,946.

Potatoes.—Average yield per acre, 47.3 bushels; total yield, 5,532,170 bushels; total value at 85 cents per bushel, $4,702,344.

Hay (Tame).—Average yield, 1.5 tons; total yield, 4,010,300 tons; average price, $9.93; total value, $39,822,279.

Hay (Wild).—Average yield, 1.3 tons; total yield, 910,205 tons; average price, $8.80 per ton; total value, $8,009,804.

	Acreage	Average Yield	Average Price	Total Yield	Total Value
Corn	9,434,500	34.9 bu.	$ .59	329,343,000 bu.	$194,311,370
Oats	4,824,400	34.2 bu.	.34	164,851,000 bu.	56,049,340
Spring Wheat	365,300	15.1 bu.	.75	5,510,200 bu.	4,132,650
Winter Wheat	505,740	23.1 bu.	.77	11,693,900 bu.	9,004,303
Barley	368,600	23.8 bu.	.53	8,756,300 bu.	4,640 839
Rye	69,830	18.3 bu.	.59	1,274,500 bu.	751,955
Flax Seed	22,355	10.0 bu.	1.36	223,490 bu.	303,946
Potatoes	117,000	47.3 bu.	.85	5,532,170 bu.	4,702,344
Hay (Tame)	2,632,200	1.5 tons	9.93	4,010,300 tons	39,822,279
Hay (Wild)	727,165	1.3 tons	8.80	910,205 tons	8,009,804
Pasture and Grazing				Estimated	83,000,000
Alfalfa				Estimated	1,821,090
Ensilage				Estimated	2,156,000
Timothy Seed				Estimated	3,059,965
Clover Seed				Estimated	592,552
Sweet Corn				Estimated	700,000
Pop Corn				Estimated	385,000
Fruit Crop				Estimated	7,000,000
Garden Truck				Estimated	1,000,000
Miscellaneous Crops				Estimated	8,000,000
Total value					$429,443,437
The estimated value of soil products for 1912 was					392,420,668

GEO. M. CHAPPEL,
Section Director.

REPORT OF COMMITTEE ON RESOLUTIONS.

President Cameron: The next will be the report of the committee on resolutions. Mr. Palm is chairman of that committee. Now, before we go any further I wish to say that we had on the program this afternoon Hon. Chas. Downing, Secretary Indiana State Fair, who was to be here this afternoon. We got word from Mr. Downing this afternoon that he had business before the State Fair Organization at Indianapolis and could not be here.

REPORT OF COMMITTEE ON RESOLUTIONS.

Mr. Palm: To the Members of The State Agricultural Convention—Gentlemen: We, your committee on resolutions, beg leave to submit the following:

We have special pleasure in noting the very carefully prepared and comprehensive report just read in your hearing by your secretary of the proceedings of the State Agricultural Society for the preceding year. The facts set forth in this report should be a source of congratulation and pride to every farmer and producer in Iowa. The fullness and excellence of Iowa's farm products, giving to her and her citizenship a nation-wide attention, is focalized and made tangible by the annual exhibits at our great state fair.

It has been suggested that the several counties of Iowa be encouraged to make a local exhibit of their respective products at the State Fair. This would be in line of unifying all the producing interests of the State and be a most progressive feature. But the local or county fairs in Iowa have become features of such high excellence in themselves, and are of such universally recognized value to their several local communities, and are withal in such close touch and helpful and reciprocal relation with the State Society that we feel that this should be left to their own initiative, and as they may each see their several interests. We would rather recommend that the several counties be encouraged to make exhibits in the various departments of the State Society, and in this regular and proper way both gratify their local pride and add to, and strengthen the state exhibition.

Inasmuch as we realize the value of strong local fairs for the promotion of the best agricultural and industrial interests of the communities they serve, and also realizing the difficulties they meet in making it a successful undertaking, we, therefore, urge a generous policy on the part of the General Assembly toward the increase in the support fund now given the worthy county and district fairs in Iowa.

It is the sense of this meeting that there should be no discrimination by the railroads in the shipments of live stock for exhibition to and from the Iowa State Fair. We understand that there is discrimination against the shipment of horses as the roads now return free all live stock shipped to the Iowa State Fair for exhibition, except horses, which are charged a full fare to and from the point of shipment, which we can but regard as a discrimination against one of the most important industries and greatest attractions represented at our State Fair.

We are especially gratified at the good feeling and mutually helpful relation existing between the state society, through their officers, and the several county fairs throughout the state. This cordial and mutually helpful relation should continue in a common effort and interest to advance the great agricultural and producing interests of Iowa.

We most heartily thank the officers of the society for the prudent, careful and intelligent manner in which they have conducted the business affairs of Iowa's great fair. Through their untiring efforts we now have the high distinction of having in Iowa the greatest agricultural fair and industrial exposition in our commonwealth of states.

And I, Mr. Chairman, move the adoption of these resolutions.

Motion seconded and carried.

President Cameron: Gentlemen, the next report we will have will be that of the committee on credentials. Now, gentlemen, those whose names are called will please answer so that the Secretary will know they are present.

REPORT OF THE COMMITTEE ON CREDENTIALS.

The committee on credentials presented the following report:

We, your committee on credentials, beg leave to report that we have examined the credentials on file and find the following delegates entitled to take part and vote in this convention, the number of delegates entitled to the privileges of the convention being one hundred and seven.

Respectfully submitted,
JOHN P. MULLEN,
W. W. MORROW,
JAMES NOVAK,
Committee.

DELEGATES ENTITLED TO VOTE IN THE STATE AGRICULTURAL CONVENTION DECEMBER 10, 1913.

COUNTY AND DISTRICT FAIRS.

Benton County Agricultural Society	H. C. White, Vinton
Bremer County Fair Association	J. Q. Lauer, Waverly
Buchanan County Fair Association	A. G. Rigby, Independence
Buena Vista County Agricultural Society	W. J. Sievers, Alta
Calhoun County Fair Association	C. G. Kaskey, Manson
Rockwell City Fair Association	J. H. Brandt, Rockwell City
Carroll County Fair & Driving Park Association	Peter Stephany, Carroll
Cedar County Fair Association	C. F. Simmermaker, Tipton
North Iowa Fair	Harvey Woods, Mason City
Big Four Agricultural Society	J. J. Harker, Nashua
Davis County Agricultural Society	H. C. Leach, Bloomfield
Franklin County Agricultural Society	T. W. Purcell, Hampton
Greene County Fair Association	S. C. Culbertson, Jefferson
Guthrie County Agricultural Society	B. F. Davidson, Menlo
Hancock County Agricultural Society	J. E. Brooker, Britt
Hardin County Agricultural Society	Geo. W. Haynes, Eldora
Henry County Agricultural Association	John W. Palm, Mt. Pleasant
Winfield Fair Association	John A. Baxter, Winfield
Jefferson County Agricultural Society	Sanford Zeigler, Fairfield
Kossuth County Agricultural Association	E. A. Wolcott, Algona
West Point District Agricultural Society	Joseph Carver, West Point
Lee County Fair and Agricultural Society	Chris Haffner, Donnellson
Columbus Junction District Fair Ass'n	J. C. Duncan, Columbus Junction
New Sharon District Agricultural Society	J. C. Heitsman, New Sharon
Eden District Agricultural Society	Merritt Greene, Marshalltown
Marshall County Fair Association	W. M. Clark, Marshalltown
Mills County Agricultural Society	Henry Wilson, Malvern
Mitchell County Agricultural Society	Carl H. Spaanum, Osage
Monona County Fair Association	N. W. McBeath, Whiting
Monroe County Fair Association	C. T. Porter, Albia
Union District Agricultural Society	W. H. Shipman, West Liberty
Shenandoah Fair Association	J. H. Eischeid, Shenandoah
Clarinda Fair Association	J. C. Beckner, Clarinda
Big Four District Fair	E. A. Elliott, Fonda
Pottawattamie County Fair Association	C. H. Reed, Avoca
Poweshiek County Central Agricultural Society	James Nowak, Malcom
Poweshiek County Central Agricultural Society	J. A. Baugham, Grinnell
Sac County Fair Association	Robert Leach, Sac City
Shelby County Agricultural Society	L. H. Pickard, Harlan
Central Iowa Fair Association	E. H. Graves, Ames
Tama County Fair Association	J. G. Weiting, Toledo
Eldon Big Four District Agricultural Society	H. R. Baker, Eldon
Forest City Park and Fair Association	Albert Swesson, Forest City
Winneshiek County Agricultural Society	H. J. Green, Decorah
Inter State Live Stock Fair Association	Joe Morton, Sioux City
Wright County Agricultural Society	W. C. Brown, Clarion

FARMERS' INSTITUTES.

Appanoose County	L. D. Whitton, Moravia
Bremer County	J. W. Bennett, Janesville
Buena Vista County	Louis P. Pingel, Rembrandt
Buena Vista County	C. A. Fulton, Storm Lake
Calhoun County	A. W. Eshbaugh, Rockwell City
Cherokee County	Oscar E. Heline, Marcus
Decatur County	A. E. Coterill, Leon
Des Moines County	S. H. Sater, Danville
Fremont County	M. A. Kraschel, Shenandoah
Hancock County	Tom Peterson, Britt
Henry County	A. S. Loveland, Mt. Pleasant
Ida County	J. J. Smith, Arthur
Jefferson County	Bern D. Coleson, Fairfield
Keokuk County	W. E. Utterback, Sigourney
Kossuth County	Fred Corey, Algona
Lee County	George Harnagal, Donnellson
Linn County	George Burge, Mt. Vernon
Louisa County	E. Colton, Columbus City
Mahaska County	W. I. Rice, Oskaloosa
Marion County	Seth Way, Knoxville
Mills County	Minnie Summers, Malvern
Monona County	Clyde Whiting, Whiting
Muscatine County	F. D. Steen, West Liberty
Polk County	George Grinstead, Mitchellville
Poweshiek County	J. J. Axtell, Deep River
Ringgold County	Grant Stahl, Diagonal
Sioux County	G. L. Venard, Hawarden
Union County	Wm. Brown, Afton
Van Buren County	Geo. V. Leffler, Stockport
Woodbury County	F. C. Colby, Sergeant Bluff

SHORT COURSES DRAWING INSTITUTE AID.

Washington County	George Reed, Washington
Winnebago County	John Wheeler, Forest City

COUNTIES IN WHICH NO FAIRS WERE HELD.

Clarke County	John Ledgerwood, Osceola
Dallas County	O. L. Gray, Dallas Center
Decatur County	C. W. Hoffman, Leon
Des Moines County	R. D. Seifken, Mediapolis
Fremont County	C. M. Spencer, Randolph
Lucas County	D. A. McMains, Derby
Polk County	J. A. Backman, Des Moines
Ringgold County	J. F. Wall, Mt. Ayr
Union County	W. W. Morrow, Afton
Washington County	D. J. Palmer, Washington

ASSOCIATIONS ENTITLED TO REPRESENTATION.

State Horticultural Society	C. G. Blodgett, Mt. Pleasant

STATE BOARD OF AGRICULTURE.

EX-OFFICIO MEMBERS.

Governor	Geo. W. Clarke, Des Moines
State Veterinarian	Dr. J. I. Gibson, Des Moines
State Dairy and Food Commissioner	W. B. Barney, Des Moines

OFFICERS.

President	C. E. Cameron, Alta
Vice-President	O. A. Olson, Forest City
Secretary	A. R. Corey, Des Moines
Treasurer	G. S. Gilbertson, Des Moines

DISTRICT MEMBERS.

First District	R. S. Johnston, Columbus Junction
Second District	C. W. Phillips, Maquoketa
Third District	E. M. Reeves, Waverly
Fourth District	E. J. Curtin, Decorah
Fifth District	E. M. Wentworth, State Center
Sixth District	T. C. Legoe, What Cheer
Seventh District	C. F. Curtiss, Ames
Eighth District	F. E. Sheldon, Mt. Ayr
Ninth District	J. F. Summers, Malvern
Tenth District	J. P. Mullen, Fonda
Eleventh District	H. L. Pike, Whiting

On motion of Mr. Mullen, duly seconded, the report of the committee was adopted.

The President: Now, gentlemen, the next order of business is the election of officers.

Vice-President Olson took the chair and called for nominations.

Mr. Morrow of Union county: I wish to place in nomination for president a man who is well and favorably known to every state fair exhibitor, a gentleman who has done more to build up the great Iowa State Fair than any other man that has ever occupied that position, a man who is not only recognized at home for his ability, but is recognized among state fair people as one of the greatest state fair managers in this country. I want to place in nomination, to succeed himself as president, Mr. C. E. Cameron.

Motion seconded by C. W. Hoffman of Decatur county.

Moved and seconded that the Secretary cast the ballot of the convention for the election of C. E. Cameron as President to succeed himself.

Note:—See supplemental report of Credentials Committee, Page———

Vice-President Olson: Gentlemen, you have heard the motion that the rules be suspended, and that the vote be cast in favor of Chas. E. Cameron for president. Are you ready for the question?

Motion carried.

Secretary Corey: Gentlemen, I cast the 107 votes of this convention for Mr. C. E. Cameron for President of the Iowa Department of Agriculture for one year.

Vice-President Olson: I now declare Mr. C. E. Cameron duly elected.

President Cameron: Gentlemen, I have not words to express my appreciation of this continued confidence. I have felt greatly elated today, and all through our meetings, especially when our governor spoke this morning in regard to the works of this great institution of Iowa. I want to thank you, gentlemen, from the bottom of my heart for this favor.

President Cameron: The next, gentlemen, will be the election of vice-president.

F. E. Sheldon of Ringgold county: I wish to place in nomination for Vice-President, Mr. O. A. Olson to succeed himself.

Motion seconded by C. A. Fulton of Buena Vista county.

A Member: And if there are no other nominations I move that the rules be suspended and the Secretary cast the ballot for the election of Mr. O. A. Olson as Vice-President.

Motion seconded and carried.

Secretary Corey: I so cast 107 votes of this convention for Mr. O. A. Olson to succeed himself as Vice-President for the period of one year.

President Cameron: Therefore, I declare Mr. Olson duly elected Vice-President for the ensuing year.

Vice-President Olson: Gentlemen, I thank you.

President Cameron: Gentlemen, the next is the election of director from the first district.

Col. D. J. Palmer of Washington county: Mr. President, I think we might congratulate ourselves on the fact that we have had such a successful number of expositions in the last few years. I rise to put in nomination a man from the first district who has been one of a number of men who have made the fair association a success these years past, one who has been tried and has not been found wanting, one who has given his time and his own money to forward these expositions. I name R. S. Johnson from Louisa county.

Mr. H. C. Leach of Davis county: I want to place in nomination a man whom I have known for years, who represents one of the best county fairs in the state of Iowa, a town where, as Prof. Kennedy stated this morning, the largest colt show that has ever been held was conducted. That shows there must be something doing down there. I nominate Mr. C. H. Tribby of Henry county.

Motion seconded by S. H. Sater of Des Moines county.

President Cameron: Are there any further nominations, gentlemen? If not the nominations are closed. Owing to the fact that we have two candidates it will be necessary to ballot. I appoint as tellers: T. W. Purcell, W. M. Clark and C. W. Hoffman.

President Cameron: Have all voted who wish? Everybody having voted the ballot is closed. Result of the ballot: R. S. Johnson, 43; C. H. Tribby, 64.

President Cameron: I hereby declare Mr. C. H. Tribby duly elected as member of the state board of agriculture from the first district for the term of two years. The next, gentlemen, is the election of a director from the third district.

T. W. Purcell of Franklin county: I desire to nominate Mr. Elmer Reeves as director from the third district.

Motion seconded by Mr. Mullen of Pocahontas county.

Moved by Mr. Sievers of Buena Vista county that the rules be suspended and the Secretary cast the entire vote of the association for Mr. E. M. Reeves to succeed himself as director from the third district. Motion seconded and carried.

Secretary Corey: I so cast 107 votes of this convention for E. M. Reeves to succeed himself as member of the board of directors from the third district for two years.

President Cameron: I hereby declare E. M. Reeves duly elected as a member of this board for two years. The next is the director from the fifth district.

Mr. W. M. Clark of Marshall county: I desire to place in nomination Mr. E. M. Wentworth of Marshall county to succeed himself as director from the fifth district.

Nomination of Mr. Wentworth seconded by Mr. Reeves.

Mr. George Burge of Linn county: On behalf of Linn county I represent the district fair at Marion, and I was delegated by them, the Farmers Institute at Walker and the Farmers Institute of Springville to come here and place in nomination a man from the fifth district, a young man who had the indorsement of the meeting in Chicago of all the exhibitors of the International Exposition in Chicago. Delegated by them to come down here and talk for a young man who has put Iowa on the map as a breeder of Hereford cattle and pure-bred live stock, a young man who represents agriculture, a booster for everything pertaining to agriculture. A young man whose whole time has been taken up pushing forward agriculture, a young man who will represent the best interests of the younger generation in the state of Iowa. I have the indorsement of the Jones County District Fair at Anamosa in behalf of this young man, and the Beef Producers. I was delegated to act for the Iowa Beef Producers Association, the largest association, with the exception of the Dairymen, in the state of Iowa. I say that he is the kind of a man we want to push forward. I nominate Mr. Cyrus A. Tow of Norway, Iowa, to represent the fifth district.

Nomination seconded by Mr. White of Benton county.

President Cameron: If there are no further nominations, nominations are closed. Prepare your ballots, gentlemen.

On motion of the chairman of the credentials committee the following delegates were added to the list of delegates entitled to take part in the convention:

Boone Driving Park & Fair Association	A. M. Burnside, Boone
Warren County Farmers Institute	W. F. Desenberg, Norwalk

President Cameron: Has everybody voted? If so, the ballot is closed. Results of ballot: Cyrus A. Tow, 64; E. M. Wentworth, 45.

E. M. Wentworth: I desire to move to make the nomination and the election of Mr. Cyrus A. Tow of Norway, unanimous, and I wish to thank the gentlemen who have supported me in the past four years, and the gentlemen who supported me today from the bottom of my heart, and to say to those who saw fit to vote for the younger man who is making a reputation for the state of Iowa. He is our mutual friend, and there is no jealous streak in my make-up. I hope when he leaves the board at the end of three or four years, that he leaves it with the pleasant recollections with which I leave it, and with the satisfaction which we, who have been members of the board during the past four years have had after undergong the closest scrutiny of the legislature of Iowa and the city of Des Moines, who could find no fly specks on our escutcheon.

Motion seconded and carried.

Mr. Geo. Burge: Mr. Chairman, I just want to say that I have known Mr. Wentworth many years, and it was just a question, as I explained to Mr. Wentworth, gentlemen, of loving Caesar less and Rome more. I have the highest regards for Mr. Wentworth, and our relations have always been friendly, and, as I told the boys here, if Mr. Wentworth beats me he will find me just as good a friend, and I want to say to him that I think we have conducted this on a fair and square basis.

The President declared Mr. Cyrus A. Tow of Norway, Benton county, duly elected member of the board from the fifth district for the term of two years.

President Cameron: Gentlemen, the next is the election of a director from the seventh district.

Mr. E. H. Graves of Story county: On behalf of Story county I wish to place in nomination a gentleman who does not need to be introduced to you, Mr. C. F. Curtiss, to succeed himself on this board.

Seconded by Mr. Reed of Pottawattamie county.

Mr. E. M. Wentworth: Mr. President, I think the members of this organization are entitled to know something about where the members of the board stand, and, as a member of the board for a little time longer, I desire to second the nomination, a nomination which I originally made here a number of years ago the first time he was ever presented to the board, and I would like to make it the last act of my official life, to move his nomination, and that the rules be suspended and the president shall be instructed to cast the ballot of this association for the noblest Roman of them all, Chas. F. Curtiss.

Motion carried.

President Cameron: I have the pleasure of casting the entire 109 votes for Charles F. Curtiss, to become director of this association from the seventh district. I therefore declare him elected.

The next, gentlemen, is the election of a member from the ninth district.

Mr. Wilson of Mills county: I wish to place in nomination Mr. John F. Summers to succeed himself.

Motion seconded by Mr. McBeath of Monona county.

Mr. Reeves: If there are no other nominations I move that the rules be suspended and the Secretary cast the ballot for Mr. Summers.

Motion carried.

Secretary Corey: I so cast 109 votes of this convention for J. F. Summers to succeed himself as a member of the state board of agriculture from the ninth district for two years.

President Cameron: I therefore declare Mr. J. F. Summers elected as a member of this board from the ninth district.

The next is the election of a director from the eleventh district.

Mr. Purcell of Franklin county: I nominate Mr. H. L. Pike of Monona county to succeed himself.

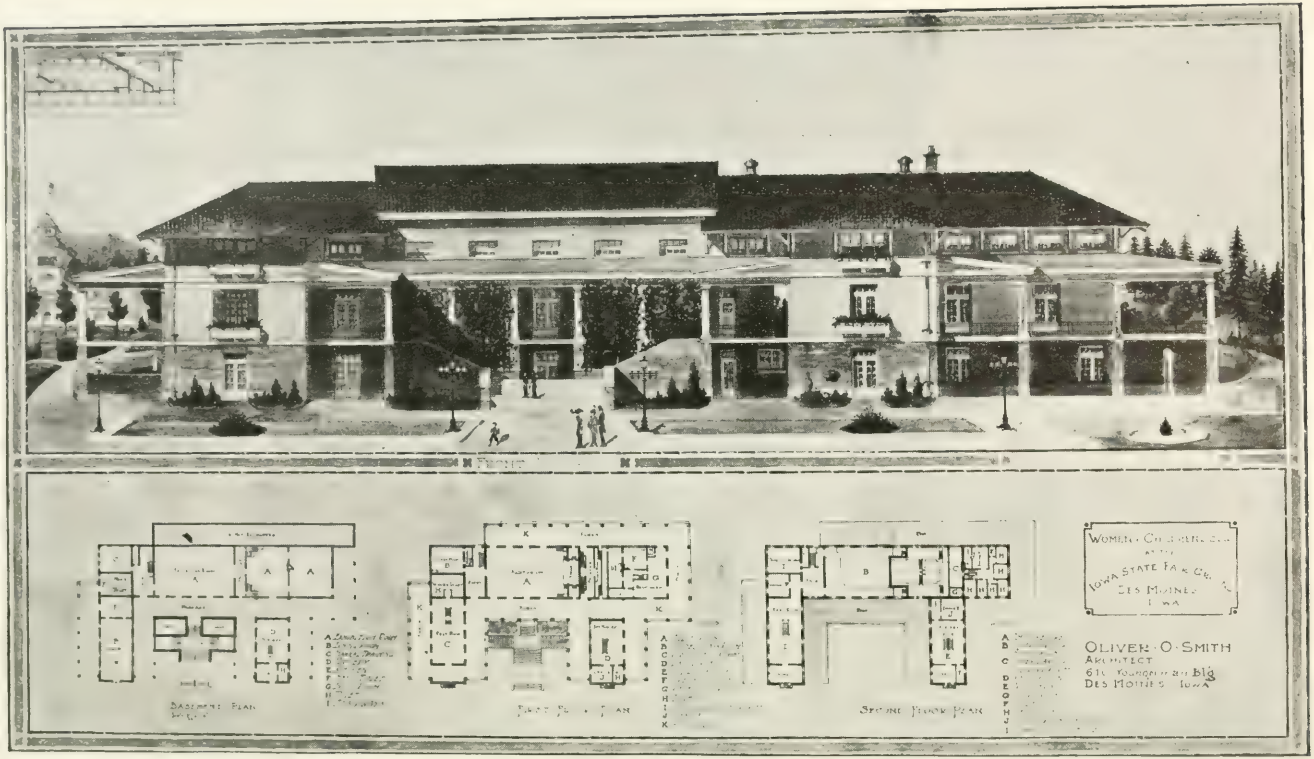
Motion seconded by Mr. Morton of Woodbury county and he moved that the rules be suspended and the Secretary cast the ballot of the association for Mr. H. L. Pike to succeed himself as director from the eleventh district. Motion carried.

Secretary Corey: I so cast 109 votes of this convention for H. L. Pike to succeed himself as a member of the board of agriculture from the eleventh district.

President Cameron: I therefore declare Mr. Pike elected member of the board from the eleventh district for the ensuing two years.

Now, gentlemen, is there any unfinished business before the convention? If not, a motion to adjourn is in order.

Moved that the convention adjourn. Motion carried.


FRONT
BASEMENT PLAN
FIRST FLOOR PLAN
SECOND FLOOR PLAN
IOWA STATE FAIR GROUNDS
DES MOINES
IOWA
OLIVER · O · SMITH
ARCHITECT
DES MOINES IOWA

Drawing including floor plan of the Women and Childrens Building, Iowa State Fair Grounds, started September 1913, completed July 1, 1914.

PART III.

Proceedings of the Sixth Annual Meeting of the Iowa County and District Fair Managers Association

Des Moines, Iowa, December 9, 1913, 1:00 p. m.

Meeting called to order by the President, J. B. Mullen, Fonda, Iowa.

The President: I am pleased to call to order the Sixth Annual Convention of the Iowa County and District Fair Managers. It is somewhat different today from what it was five or six years ago, when this organization was started. Only a few responded. Today we have a splendid crowd of the energetic, active and progressive fair managers of Iowa. I can assure you that this will be an interesting meeting right from the start, because so many fairs are represented here—so many fairs appreciate the work that this organization has accomplished for every fair which has been represented at these meetings for the last four or five years. I hope that the organization will continue to grow, that the interest that has been shown in this way for the past four or five years will continue, and that my successor will be pleased to call this meeting again next year to a larger and more numerous audience.

We will proceed with the program as it is printed, followed by impromptu addresses and the experiences of the different fair managers, and we ask that all of you take a keen interest in these matters and voice your own opinions and your own sentiments fully and in a friendly manner, because there are a great many people here who came to get the experience of the older managers, the managers who have made their fairs in their immediate localities a success. We think that all of you will bring back home some idea to put in operation that will make your local fair a greater and a grander success.

This evening at 6:30 we will have a banquet, for which we also have a very interesting program. I have no definite written report to make to you. Mr. Rigby, I understand, has one, but I will make this suggestion in advance of his report, for I coincide with his opinion in that matter, that, on account of the growing proportions of this organization, a little more money is needed. The assessment at present is only $4.00. At the very least, in my judgment, it should be $5.00, and I question whether that will fully meet the requirements attendant on these meetings. We, of course, will be told that in Mr. Rigby's report, and it will probably come up for discussion in the business session after the banquet.

I think that all of you appreciate the energy and the activity of Secretary Rigby in giving such a splendid entertainment this morning at the Unique Theater with moving pictures of the state fair, and the other county and district fairs of the state that availed themselves of the opportunity he gave them.

The first number on the program will be, "Building Up the County Fair," by Peter Stephany, of Carroll, Iowa.

BUILDING UP THE COUNTY FAIR.

BY PETER STEPHANY, CARROLL, IOWA.

Your able Secretary of this association some few days ago sent me notice that I was to read a paper upon this occasion entitled "Building up the County Fair." Not being a person who has had much, if any, experience in public speaking, and having had but one year's experience as an officer of the county fair, you will readily see that I might properly appear before this audience with a great deal of hesitancy and reluctance. I dare say that there are many men in this audience who have had so much more experience in building up county fairs that it must seem rather presumptive for one like myself to offer any suggestions that might be instructive to the hearers. Having had but one year's experience as above suggested, and my knowledge of county fairs being limited almost exclusively to this one effort, I hope you will pardon me if some of my remarks may refer to matters that might seem somewhat personal, that is, based upon my personal experience.

In this progressive day and age when all of our efforts are met with severe and effective competition we are brought to realize more than ever that advertising is profitable. This is no exception with the county fair. It has been our experience that many people will attend a county fair if they can be notified in advance of some of the features of the fair, and particularly is this true if such notice can be brought to their attion in an attractive manner. The mere mentioning in the newspapers will hardly reach the people, although this feature should not be overlooked. I would advocate a liberal advertising in the local newspapers as well as the newspapers in the surrounding towns and counties. It has been our experience that the locals should be written by the management of the fair association themselves rather than to leave it to the editor, as much good can be derived from the way these sentences are worded.

No sooner does the date of your fair become known when the secretary will be interviewed by numerous agents attempting to sell them advertising matter in the shape of posters, bills, etc. My experience has been somewhat unique in this respect for the reason that I had set my mind to secure a kind of advertisement along this line which most of the agents told me could not be obtained. After having satisfied myself just what I wanted, and after running a few advertisements in the Billboard and other periodicals of that nature, I finally succeeded in locating a firm which would make what I choose to call muslin banners, with the large letters. It was this form of advertising that we used at Carroll on the telephone and telegraph poles, cross roads, entrances into the various towns and cities, etc. I have every reason to believe that this was more than successful and I had the satisfaction of seeing a number of these muslin banners still firmly tacked in their position long after our fair was over and long after other advertisements of a similar nature had been torn to pieces by the elements. Too much stress cannot be placed upon this one fact and that is that something of this nature must be done to call attention to the people that the fair is to be held at a certain city at a certain date and mentioning some of the feature attractions.

The other suggestions along the line of advertising would be for the association to get out and distribute a catalogue, this booklet to be gotten up in as attractive a manner as possible. We used a catalogue last year at Carroll and we have heard many favorable remarks upon it. If such a catalogue could be taken to the home of every farmer in the county, including some in the neighboring counties, so that these families could be induced to spend five or ten minutes looking through the catalogue and getting an idea of what is to occur at the fair it is only reasonable to conclude that their interest will be aroused and that they will then and there resolve to be present at least one day of the fair.

As suggested above this is an age when advertising is a necessity because of the rivalry and bitter competition that most of us have to put up with when we set out to accomplish anything. It is true that many kinds and forms of advertisement accomplish but little, but if such advertising is done in a discreet and effective manner you will be surprised at the results and you will then believe more than ever in the old adage that "It Pays to Advertise."

One of the features of a county fair which should not be overlooked is what might be termed "Free Attractions." Many of us will agree that our experience in attending county fairs during the past has shown us that on many occasions we have found this condition, that is, that at many times during the day there would seem to be an apparent lull or nothing doing to interest the audience. It is true that you cannot have a race every five or ten minutes during the entire day, neither would the people desire this, but you must have something to entertain the people all the time. Many suggestions can be offered along this line but our experience at Carroll has taught us that good music will go a long ways toward relieving the management from any worry along this line. Too many fair associations are liable to feel themselves obligated to secure as musical attractions local bands, regardless of whether they are capable of playing any real music or not. We have the idea in mind that we must patronize home industries. That is true if your particular town happens to have a band that could really entertain an audience. Another thing, too many of our fair managers seem to think that they ought not to spend over $150.00 or $200.00 for music during the three or four days. This is a mistake. The Carroll fair last year procured one of the best military bands in the state of Iowa, at a cost of $600.00 and every one agrees that it was the best investment that the fair association ever made. As long as the band is playing no one present seems to care whether there are races or not.

Of course there are other forms of free attractions which should not be overlooked. One of the most usual of these is what is known as the wild animal show such as the lions, tigers, leopards and other animals, and then other people prefer tumbling acts or trapeze performances. Something along this order should be taking place immediately in front of the grandstand to entertain the people between acts. These amusements are particularly entertaining to children, and it must not be forgotten that the young folks are a great portion of the county fairs and one must cater to them in order to build up a successful fair.

We had an experience at Carroll last summer which I desire to present upon this occasion. Our management engaged one of these free attractions a considerable length of time before the opening of the fair, having procured their signature to a written contract. Shortly before our fair actually opened we were notified that they could not come. They being non-residents of the state it appeared to us as if we had no effective recourse and were simply left out in the cold. It seems to me that the managers of the county fairs ought to demand some kind of a forfeiture from these parties, insuring their living up to the contract. As it is, it is practically a unilateral contract or one in which one party only is bound. Our experience at Carroll came very near being a fatal one but luckily we succeeded in getting an aviator to fill in, but were compelled to secure him from a far off distance and at a great expense. We do not regret, however, that we had procured him because he was very skillful and lived up to his contract in every detail, pulling off some of the finest aerial flights that anyone ever witnessed. I might suggest here, however, that this form of entertainment is not as desirable now as it was a few years ago for the reason that most of our people today have seen a number of aerial flights of this nature and are not particularly anxious to see one again for the reason that they are very similar.

I think you will agree with me that the one feature of every county fair which attracts more people than any other is that generally known as racing. Managers of county fairs usually have a very difficult time in procuring good horses and plenty of them. We had a little difficulty at the Carroll fair last year for the reason that there seemed to be a shortage of these animals or, rather, there were several county fairs being held in our part of the state during the same week. We succeeded, however, in obtaining our portion of good horses and feel free to say, without fear of successful contradiction, that the races at Carroll this year were far above the average that were pulled off at any county fair in the state of Iowa. Our management made a special effort to treat the horsemen in a courteous manner while they were with us. We frequently hear the charge that horsemen are very irritable and are hard to get along with or please. Our experience has been that this is a mistaken idea and that these horsemen are as human as other people, and, if treated properly, will give you the best they have and do it cheerfully. We have every reason to believe that many of these horsemen, in the past, have not been treated properly by the managers of the various county fairs. It was our effort to make it pleasant for the horsemen and we believe we succeeded. We took particular care to see to it that all mail, telegrams, express and freight packages were promptly delivered to the fair grounds, as it would be very difficult for these horsemen to procure them themselves. One little incident happened which I feel I must relate and trust you will pardon me for doing so. One of the horsemen had sent away for a piece of harness which he was unable to get here in Carroll or any neighboring town. He was very anxious to have this piece of harness as soon as it arrived at the local express office. He had not notified us to have it sent out to him but we took it upon ourselves to do so just the same. After we had delivered to him this piece of harness, which happened to be in time for him to use it on his horse in one of the most important races, he came to me and told me that it was the first time in his experience that he had ever received that kind of treatment from any county fair. He was overcome with joy and his horse won the race handily.

Horse racing, instead of being attractive, may be the greatest bore to the people if the races are not pulled off promptly at the time for which they are called. The management of the county fair should make a special effort to have the various races pulled off on the dot. This we tried to do at Carroll last summer and we believe we succeeded.

In order to give the people a little relief from horse racing I consider it advisable to scatter in a few automobile and motorcycle races. These are always attractive features if properly handled. In the auto races it is wise to mix them with speed races, novelty races, and other forms of entertainment which these motor vehicles are able to supply.

Another feature of a county fair should not be overlooked, and that is to procure good tent shows. We must not overlook the fact that all people who attend the county fairs are not particularly interested in racing. This is largely true of women and children. The tent shows serve a good purpose in this case. Our experience has taught us, however, that it is somewhat difficult, to procure good and respectable shows. I strongly advise against permitting any of these shows at a county fair which border on the suggestive or indecent. Even throwing aside the moral view of this question and I am sure, no one would be willing to do this, even from a business point of view this kind of show is unsuccessful. True it will attract a certain class of people but they are not the people that the fair associations are catering to. The sooner the fair associations awaken to the fact that we no longer have any use for the indecent or suggestive show the better it will be for all of us.

Another thing, county fairs are usually held in the time when the days are the hottest. For this reason a goodly supply of refreshment stands should be provided. The question often arises here whether the management should sell the exclusive privilege for these refreshment stands or whether they should grant this privilege to various individuals. Our experience has been that the exclusive privilege proposition is not a good one and we strongly recommend that such a procedure be discouraged. It is the duty of the fair association management, however, to see to it that these refreshment stands are present, including eating places and, last but not least, these places should be watched carefully and seen to that they are in a sanitary condition. I think the state department of pure food usually has an inspector to look after them, but should he fail to be there the fair management should take this matter in hand and see to it. Some fairs have a great deal of trouble in providing drinking water for the people or, at least, providing it for them in a sanitary manner. This, above all, should be given the very strictest attention, and nothing but good and wholesome water should be offered the people whom you charge admission to the county fair.

It occurs to me that the old original idea of the county fair was setting aside a time when the farmers and the other producing people of the county would have an opportunity to come together and exhibit their productions to each other and attempt, thereby, to become more proficient in the line that they were following. It is true, that we have gotten away from this old idea somewhat, and I believe that we are making a mistake. In other words, the farmer and his brother producers should be encouraged to go back to the old idea and bring in his live stock, farm products, manufactured articles, as of yore. I will call your attention to the definition of the word fair. It is as follows: 1. A state market in a particular town or city; a regular meeting of buyers and sellers for trade. 2. An occasional joint exhibition of articles for sale or inspection; a sale or exhibition of goods for the promotion of some public interest. 3. Market; place of selling.

You will readily see that we are drifting away from the original idea of a fair. In other words, we are making it more of an amusement proposition rather than carrying out the idea of old. I regret that this is the case and I hope that the fair managements throughout the state of Iowa, the greatest agricultural state in the union, will try to come back to the old notion of the county fair. Let us have more attractions for the farmer, for the manufacturer, for the live stock grower, and last but not least, for the ladies who are gifted in the art of producing fancy needle work and other articles along that line. Let us offer more and better prizes for the best exhibitions. Let us furnish better buildings for these exhibitions, and let us make it known to the farmer, the manufacturer and the artist of the needle that we want their exhibitions at our county fairs.

In conclusion I desire to call your attention to the fact that the success of a county fair depends entirely upon one man and he is usually designated as the secretary. My experience has taught me that unless one man is given the exclusive power to conduct all the matters in connection with the county fair that you are bound to get your wires crossed. The fair association usually has what is known as a president, secretary, treasurer, possibly a vice-president and a board of directors. If the secretary has not exclusive authority by reason of the office that he holds the board of directors should vote him that authority and stand by him in his effort to make the fair a success. No business concern or no other proposition of any kind is a success when it has too many men in charge. It is true, one man cannot do all that is required to build up and properly conduct a county fair, but he should be given the authority to appoint and employ others to help him. But he must be the head, and the others should help him. I strongly advocate the idea of the secretary to appoint heads for either department and give these heads the authority to appoint their assistants. With this system you are bound to succeed; without it the Lord only knows how many mix-ups and delicate situations will arise before the fair is over.

As I stated before I have had a limited experience in the management of county fairs and, therefore, feel my inability to properly present the subject to you on this occasion. Had I more time to prepare and give the subject a more careful study and consideration I am sure that I could have enlarged upon the ideas which I have attempted to present to you today. I wish to close with the remarks that the things required to build up a county fair are, briefly—well selected advertising; an entertaining program; kind and courteous treatment to all who are invited to attend the fair, and, last but not least, hard, honest, and systematic labor on the part of those who are promoting the same.

DISCUSSION.

The President: I think I made the statement that we would have the printed program first, and have it followed by a general discussion. However, since listening to the paper, I have about changed my mind on that proposition and think we better have a general discussion after each paper is read. That might be more interesting. The subject will then be fresh in your minds, and I think there are some good points in this paper just read that will stand discussion.

A Delegate: I would like to ask where you get that advertising matter and the muslin banners. He stated he found a firm that published them.

Mr. Stephany: I think I ran the local in the Billboard for probably two weeks before I received a reply. I had commenced to think, myself, that I was not going to get anything in that line. But I received word from a firm that makes these banners at Ithaca, New York. The address I can not give off hand right now, but I will be glad to furnish you the address if you will drop me a card. I was told at the outset when I was trying to get this advertising by nearly all the agents and advertising houses that it was impossible for me to get anything in that line, and the way I did those signs, I afterwards took some hard pine and had it ripped about the same size as a common lath, and I put four laths on each banner and put about, I think, eight penny nails—two eight penny nails in them and they stayed there until they were torn down. The elements did not seem to affect them a particle. I had five different kinds, five different kinds of reading matter on the different styles of banner.

A Delegate: Mr. Chairman, I represent the Monroe County Fair at Albia. I find that these signs are no good at all unless you nail them up good and strong. The wind will roll them up and they are no good at all.

A Delegate: We have used cloth banners for about five years. We get them from the American Show Printing Co., of Milwaukee, Wis., and some other company.

The Secretary: Mr. President and Gentlemen: In connection with this matter of the treatment of horsemen that was referred to in the paper we have just listened to, I wish to make a remark. We have a number of coming horsemen trained at our track at Independence, and I have been more or less interested in horses all my life, and I think I know how the horsemen feel about this matter of kind and courteous treatment. We will hear more of it later, but right at this point, while it is in my mind, I want to make one remark that I think will meet the approval, I know, of the horsemen, and I know it will of some secretaries. And that is this: When the horsemen come into a town, so often they are at the mercy of the local draymen and feed men, and they are subject to extortion. I do think it is the duty of the fair secretary to protect them in this matter as much as possible. I know one horseman from my town who told me that one of the best places he ever reached in his life he was treated all right by the fair management, and that was at Sioux City. But he said it cost $8.00 for he and the other fellow to get their stuff moved out of the depot. Those are things, of course, that the secretary is not responsible for, but, at the same time, the secretary of the fair has not very much to do and he can just as well look after those things as not. But, in all seriousness, I think that it is something that fair secretaries ought to take cognizance of and protect the horsemen as much as they can. And right when I am speaking along this line I want to repeat an incident that happened at Eldora. One of the men from our town, when he got into Eldora, piled the stuff into a wagon.

and when he got out to the fair grounds he took out his check book to pay for the job and the drayman told him no, that the secretary of the fair association took care of that. Of course he was pleased and thought that was very nice. When he came to go away he had the dray there in the morning at an unseasonable hour, got his stuff moved down to the depot and thought of course he would have to pay. He was very much surprised, but pleasantly so, to hear that statement repeated, that there was no charge at all, the fair association took care of it. And it seems in that case that they took care of them, both coming and going. A horseman appreciates little courtesies and favors of this kind, and I know it can't cost an association very much to do those things, and I think it will come back—well, in the form of entries and good will and good advertising, because these things are talked over. There is no question about it.

I think that those are points that every fair official ought to take home with him and remember. It can be done, and it pays.

The President: Has anyone else any inquiry to make in regard to any point in the paper just read? I would like to hear from any of you, or all of you, in this matter.

The Secretary: Pardon me, but there is just one point I want to raise in connection with this. This same horseman, in discussing his treatment at various places, spoke particularly in regard to the courtesies that he had received at Sioux City, and I believe that it is a policy that other fairs could well afford to adopt. I don't know but what it is all right to speak of it here, too. Of course, if it is not, you will not say anything about it when you get outside. But you know that members of the National Trotting Association, and of the American Trotting Association are supposed to report delinquents for all who make entries and fail to show up, and all that. I know it has been the policy of Sioux City, and possibly at some other places, to be reasonable about those things, and where men fail to show up on account of illness, or his horse not being in shape, or anything of that kind, he is not reported for fines. I can see no reason why a man should pay for something he has not had, and when a man enters and is unfortunate, he is enough of a loser without being held up for fines later on. I don't see why he should be reported, myself. In other words—of course, if a man races some place else, it is a different proposition. But, if a man has paid his entrance fee and has been unfortunate, I don't think there is anything to report. If he has not paid the entrance fee, as a rule, they don't pay their entrance until they get there.

Mr. Palm: I just want to say a word in appreciation of what was said about good music at the fair. Nothing is so entertaining, and can be bought at a more reasonable price, than just first class, good music at a fair. I certainly approve what he said on the question of good music, and most certainly on the question of what he said of advertising. I would like to ask him some questions, but it will take too much time. Might I ask you, Mr. Stephany, about what you paid per line in that advertising in those several papers?

Mr. Stephany: Mr. President, I had on my list twenty-seven papers, including all the papers in our county, as well as adjoining counties. The locals I sent out, I sort of figured out what they would amount to, so much a line at the regular rate, and I enclosed them all a complimentary ticket to the fair, and the following locals that we sent I requested that they send bills if there was anything to be charged, and there were only two bills out of twenty-seven sent, and my advertising with all those papers amounted to $2.50 or $3.50 apiece.

Mr. Palm: The gentleman does not talk like an amateur to me. I thoroughly approve of what he said. Now, I have had some considerable experience in this matter of advertising, but I could not do it as cheap as he did. I believe in advertising a fair. I believe it best to put good money in good advertising, and the papers are the best place to advertise. We advertised in some thirty, and we did just as he did, and we did not let any editor of a local paper write a line; we wrote them ourselves. I visited the offices of thirty newspapers and sat down and wrote the ads while there. I wrote what I thought ought to be said, and I certainly approve of that manner of using the newspapers, if it does not cost too much. I think he was a better bargain maker than I was.

Mr. Shipman: Mr. President, while I very much enjoyed the paper, there is one place where I would like to lock horns. That is the putting of all the duties on the secretary. We do not do it at our place. We have a superintendent of privileges, we have a superintendent of stalls that looks after it. We have a superintendent of tickets. The only ticket I handle is the one I buy myself. The more of that work that you can get off onto good men the more time the secretary has to look after the work that he has, and if you can get good superintendents on those jobs—and you can if you hunt for them—it makes it all the better.

Mr. Tribby: Mr. Palm asked me to let him do the advertising in the newspapers. He said he was going out to post bills, and he asked me to let him write the newspaper advertisements, and he wrote them and made a deal with the newspapers at a wholesale rate. They have just to send them in. Mr. Palm, however, is apt to write a little more and say a little more than is necessary, and it cost us some $60.00 more than I think it has in former years. But I don't think anything has ever paid the fair any better than Mr. Palm's advertising.

A Voice: Mr. Chairman, I am not a secretary, or a delegate in this convention, but I would like to drive one spike in the matter of advertising, with your consent. In 1887 I was secretary of a fair up here in Calhoun County. When we came to advertise the board of directors were not willing to invest any money, apparently. I got hold of a set of small cards, one would be a radish, with a few words with the dates of our fair. It would be printed in colors. Another would be a beet or cabbage head, and so on. We had all the different vegetables represented in colors on a picture, and about the size of a postal card. I presented this to my board and asked them to let me send for ten dollars' worth of these cards. They were printed in Ohio. It has been a good while and I have forgotten the name of the firm. They would not consent to advertising in the county papers, and so we put up posters around over the county. I should judge I sent for seven or eight dollars' worth of those cards. I forget the number I got. Every card had the date of the fair on it, and every card had a line or two admonishing people to come to the fair. I took those cards with my horse and buggy and drove around over the country on the school house line. I left a bunch at every school house, and gave every child a bunch of these cards. I put a bunch together and hung them up in each post office of that county. I think that got better results than anything else that was done while I was secretary of the county fair. If anyone desires to attempt the matter I think they will conclude as I did.

A Delegate: I represent Davis County, a fair that has been reasonably successful. When I send complimentary tickets to the different newspaper men I work a little different from the other fellows here. I am acquainted with the editor of the paper, and I would rather have a little saying come from him than from me, so I enclose him a complimentary ticket and tell him if he can do us any good to do so, and I always get a nice little write-up about the Davis County fair. I think it has more influence with the citizens than if you put in a little scribble that you pay for. If I am not acquainted with the man, I enclose the ticket and tell him what I want him to say and send in his bill. I very seldom get a bill, and they always give me a little write-up. I think it is mighty well spent.

In regard to the little tickets scattered around, I have never tried that, but my long suit on advertising is to cover every bridge and telephone pole in the whole country during the fair season. I do not send them out by some men, but go directly and do it myself. I get a couple of three gallon tin buckets and fill them full of paste. I then take an auto. You can cover a number of miles in a day. I take a fellow along, generally the privilege man, and we cover the telephone poles and the cross roads. All we have on that is ''Bloomfield Fair, September so and so.'' You can not go anywhere on that road but what you see the fair advertisements. The dates are great things to have before the people.

Mr. Palm: How about a date line in each one of the newspapers? We carry them clear across the entire head of the paper.

Mr. Pickert: I think we cannot adopt one method and continue it. We have got to change it. We at one time adopted this method of advertising: In the early part of the summer we sent and got tickets. They were for children, and we sent out to every school in the county a number of those tickets good for children; that is, from either ten or twelve, I think, or under, on the first day. That is, the first regular day of the fair, and to each teacher we sent a complimentary. Those tickets were put out before the school closed in the summer, and each child that had a ticket to come to the fair. I met them a great many times and would ask them if they were going to the fair. ''Oh, yes, we are going. I have got a ticket.'' But, of course, the facts were that they were admitted anyway. However, having a ticket, they were all sure to go. Of course, the teacher had the complimentary and she urged the whole school to attend. By getting them on the first day of the fair we made that our big day.

Of course, the quicker that you get the money in the treasury the better it is for the fair. You may have a rainy day. A great many people of the fair know that the big day is the second day, generally, but our plan was to make the biggest day the first day, if we could. We didn't advertise any attractions only for that day. The consequence was the children all came and the parents had to come to bring the children. On that day, right after dinner, we got a large number of circulars and had the boys circulating them, giving the program for the next day, and then we continued with the first day. By adopting that method we got three good days of fair; but, of course, we worked this for a time, and then you have to work on some other line. You must get something that is always changing. I don't think one method is good all the time. But it doesn't matter what you do just so you get them out, and my idea is to get them out the fore part of the summer. You may have a rainy day, and you ought to get the money in the treasury as quickly as possible. Often we get enough in to pay all the expenses.

Mr. Palm: Mr. Leach remarked that he paid for his printing with complimentary tickets. Do you regard that as the best method to pay for anything connected with the fair?

Mr. Leach: If I made that statement I did not mean it. I simply spoke about sending these complimentary tickets out to neighboring newspapers, that is all, nothing else. We do not issue but very few complimentary tickets for our fair. I think it is all right, because there is never a man comes with that ticket but what he brings one, two or three chums with him.

A Delegate: I represent Pottawattamie County. They sure have a different class in their county, or else they know how to handle it better than I do. My experience has been if we would send them a complimentary ticket they are not satisfied with that, but they want every correspondent they have all over the country to have a complimentary ticket. And when you come to advertising, the biggest part of it had to be paid for. I think they must grow different kinds of men in their county than in our county. I have never been able to get any advertising to speak of, save from my home papers, that we did not have to pay for. They charge us up with the rest of it—the home papers—before we get through.

Speaking of novel advertising, several years ago we got out an advertisement that seems to stick with us. We bought ten thousand sticks of chewing gum, and on the wrappers we put the dates of that fair. We put them in the hands of every man, woman and child. They were out reaching for that chewing gum, I can tell you. That took best of anything we have ever had in that line.

Mr. Leach: We did more of this advertising in the adjoining papers than we did at home. We have to pay the home papers square up.

A Delegate: In regard to this last year, when we got out a banner, I think it was about, well, somewhere about 2'x6', and we stretched one across the street in each town of any size in the county. This was a muslin banner, and we got it from the Stanford-Crowell people. Then we also had a cloth sign that was on a nail about, oh, I think the nail was probably fourteen to sixteen inches long. We drove those into telephone poles, and we had fair success with those. The wind would whip them around, but in turning around they would turn to the wind and not fold up.

Another thing I would like to know from the gentleman. Speaking about advertising, how much advertising were they getting from these newspapers? Did they get just a small ad giving the dates of the fair across the top for one week, or did they get, probably, two or three columns, or a three or four inch ad, or maybe a six inch ad, for their complimentary tickets? In our town they generally hold us up all the way from six to eight complimentary tickets to each paper, and then we generally pay for what advertising we get besides. That is what I mean, six or seven comps. That is what they are asking for. I represent the Kossuth County fair, and we have pretty nearly as large a county fair as there is in the state. I believe that is all for the present time.

The President: It is not my purpose to comment on all the propositions here, but I am inclined to rather emphasize one point brought out in this paper which met with some stricture from the gentleman from West Liberty, and that is the authority of the secretary. Now, I rather think that the gentleman from Carroll County did not altogether mean that the secretary of the fair does everything, but he did mean that he has control of these things in the selection largely of these superintendents. Mr. Shipman, of course, has a good idea to get good superintendents to co-operate with the secretary. That will help to a remarkable extent to make the fair a success. But I am in full agreement with the gentleman from Carroll County that the fortunes of these fairs, in large measure, rise or fall with the energy, enthusiasm and good judgment of the secretary. Where you see a poor secretary you will usually see a poor fair. Where you see a good secretary, energetic, wise, and showing discretion in these matters, you will see a good fair.

The next paper will be, "System in Fair Management," by Mr. J. Q. Lauer, of Waverly, Iowa.

SYSTEM IN FAIR MANAGEMENT.

BY J. L. LAUER OF WAVERLY.

It seems to me if this discussion kept up much longer I wouldn't have had anything new. Some of us say that at least they would rather appear on the program first, others last. It seems to me though Mr. Rigby kind of picked out those men who are new at the fair business. The gentleman just preceding me has had one year of experience, and I have had two strenuous years. When Mr. Rigby first mentioned this I thought perhaps his was a case of misplaced confidence. In his notice to me in regard to this meeting, and incidentally that our dues were due as members of this association, I in my reply was loud in my praises of the work that had been, was being and could be done in a meeting of this kind.

I finally told him I would accept, but I hadn't gone very far into the preparatory work on the subject that he appointed me before I realized myself or felt that I was inoculated with this disease, misplaced confidence. The subject assigned to me was "System in Fair Management." He was not quite satisfied with that and also told me to be prepared to give an outline of organization work as pertains to the fair of Bremer county. That is covering quite a bit of territory, but I will try to give you a synopsis as pertains to our fair up in Bremer county. I don't know as it is a great deal different from any other fair. We think we have a fair conducted along the lines of the others. When we started, of course Waverly seemed destined to be the place for holding our county fair. There was a great deal of feeling that these things should be moved back and forth. At the time we had a fair ground that was ideal. We went out amongst the merchants, and they were advocating going out to advertise among farmers, but we thought that as Waverly was a place to hold the fair we had better get the merchants. There was no trouble, they found, in getting stock enough to organize a county fair. They organized a county fair, but started different from the majority of county fairs. Taking Waverly as the center point and working out they started out and drove from Waverly and worked both ways.

We started with $10,000 worth of stock. The shares were $10.00 each. Now the shares in our association are not assessable at all. We are not organized for any pecuniary profit. It is simply a matter of anything we get we put back into the fair. We are still selling the stock, and at the present time we have nearly $9,000 worth of stock sold. In our meetings each stockholder as a stockholder is entitled to one vote. It does not make any difference how much stock you have you are entitled to one vote, and you have to be there to represent that stock. There is no game of freeze out. We are not organized that way.

Our purpose, of course, is similar to all fairs as far as that is concerned. In regard to the county indebtedness that has been incurred we can only incur one-half of our paid up capital stock. Now as I say we have about $9,000 paid up capital stock. That means that we could only incur a debt of four and one-half thousand dollars. In regard to our board of directors, we have a stockholders meeting each year. When they first organized of course they organized the same as anyone. They had twenty-seven members on the board of directors and they elected them at their stockholders meeting. The first year when they organized they elected three, two for one year. Now we elect nine in one year. We elect them at our stockholders meeting, so there are always eighteen old and original on the board of directors. On the same day, though, we meet as the executive board; that is, the board of directors, out of these twenty-seven people elect their board of directors which is four, our officers, the president, vice president, secretary and treasurer, and five members. At no time can there be more than one-third of the executive board from any one township at the time of election. Of course there might possibly somebody move into a certain township where there was close to three, and in the meantime make more than a third; but at no time of election can there be more than one-third of the directors from one certain township. That would be nine. There cannot be more than nine from one certain township. In the matter of a quorum, in our stockholders meeting we must have forty members to make a quorum to do business. In the board of directors a majority constitutes a quorum.

There is another thing in regard to the distribution of stock. There can be no distribution of stock until the dissolution of the association, and there is no way of dissolving the association or disbanding without first getting a two-thirds majority vote of the stockholders. That doesn't mean by proxy of the stock sold. You have to get two-thirds majority of the stockholders before you can dissolve the organization, and a special meeting of stockholders can be called by either the executive board or the board of directors or by petition signed by fifty stockholders. It requires either fifty stockholders on the petition or a majority vote of the executive board or the board of directors.

In regard to the organization work, I have taken that from our work there. I was not as familiar with the organization as perhaps a good many people over me were. In the first place when Mr. Rigby asked me to appear on the program I thought it should be someone more accustomed to speaking in public, and one more familiar with the work.

Now this matter of System in Fair Management. I have divided this as applies to our fair particularly. I hardly think it is a system that would apply to all conditions of fairs in all parts of the state. But the system we have conducted there we feel has been a success as far as our fair is concerned. I will try to explain it to you as best I can. I have divided it into three sections: namely, Co-operation advertising—you have gone pretty strongly into this advertising business—and the goods. I have divided it into three different parts. Now you take it as far as the co-operation goes and you have got to have a feeling of co-operation amongst your public in general, and amongst your officers in charge. Now if you can work out a system where you can get the co-operation of the public in general in connection with your officers, I can't see how you are going to fall down on a county fair. You take it, organized as we are up there, from the stockholders to the board of directors, and from the board of directors to the executive board, I as secretary of our fair up there look more to this organization in our executive board direct than I do to the organization outside. I call our executive board a wheel, and I in that respect differ from the preceding men a little. The hub I call the secretary, the spokes the officers in charge. On account of the secretary of our department there we work and have harmony in this way: All committees absolutely that we have in our organization the secretary is a part of that committee. No reports come to the secretary second handed. All reports come to him from the head because he is one of the committee. Unless there is just one happens to be the committee—one man on the committee—that is so. On the other hand when you get your board of directors and feel as though the people who have charge of the certain departments—most all of our officers have charge of some certain department, in fact all of them do—now you take the departments of your superintendents. We appoint all of our superintendents early. We have already appointed our superintendents for the following year, and the board of directors places in its secretary a certain power that he goes to work and with this certain superintendent of a certain department they form the plans for that one department. The hogs, the cattle and the sheep, the department of agriculture—anything in that line the secretary goes to work and meets with these different superintendents. They are not all confined to our officers, we take them outside. We have a superintendent who has been there ever since the fair has been organized. In that way we get working forces. The decision of a superintendent during our fair is final; if there is any controversy comes up that any of our superintendents feels as though he should have some assistance he comes to the secretary, and if he in connection with the secretary can not settle any dispute it is in our constitution that we shall have a meeting of the executive board. A year ago the only meeting we had was in regard to extending our fair over until Saturday. This year we had a meeting of the executive board during our fair, there was no complaint that I heard this year. Our superintendents of the different departments we pay them liberally compared to what, as a general thing, has been paid by other fairs. We allow them as a general thing, one assistant, whom we also pay. Every superintendent we allow one assistant, and in some departments we allow two. We have a lawn exhibit, and in the lawn exhibit we have an exhibit there whereby we have to allow each one of our superintendents three assistants. In our textile department the help that the superintendent has charge of is two assistants. Any time that we allow them any more we allow them additional help. We pay the one assistant. In the floral hall we have one assistant and we pay him. In our horse department we pay one assistant. Previous to this year the man who had charge of this department was the only man that we paid. We figured it this way, that we start with our stockholders and then go to work on down to the board of directors and then to the executive board, and we think it is getting this controlling power down to the minimum, and if you have in your work a system whereby they will come out and work and have the secretary as your hub and have the co-operation which you have to have in a successful fair, large or small, we feel as though the majority of your hardships in a county fair would be overcome.

DISCUSSION.

Mr. Palm: Could you tell us about how much you put out in that line in your fair?

Mr. Lauer: Our superintendents we paid four to five dollars per day for six days.

Mr. Palm: Do you know how much?

Mr. Lauer: No; I can not give it to you right now.

Mr. Palm: I like the suggestion very well, but we do not do it.

Mr. Lauer: I can not give it to you off hand, or I would.

Now we call these superintendents together quite frequently, and then, besides that, we take these superintendents of these different departments and go out and see the known exhibitor and also the unknown exhibitor. We go out and see that these exhibitors are interested—we try to get them interested. Now, it might be we would go to one man and he would say, "But my exhibit will not amount to anything." But we show him that it goes in the aggregate to make up a department. You can't lose from your county fair.

Mr. Palm: Mr. Speaker, would it interrupt you if you were to ask how many fairs do that?

Mr. Lauer: How many of you do that? I see there are six; Winneshiek County, Mitchell, Sac City, Sioux City, Hampton and Waverly.

Mr. Stephany: I pay our superintendents with a complimentary ticket for the season and they pay for their own meals.

Delegate from Marshalltown: Our fair is along the same plan as the organization of the Waverly fair—in fact, I think they copied after us in their forms of government. We never pay this executive committee of six anything, outside of the $2.50 a day for superintendents and $2.00 for the assistant.

Mr. Lauer: If they happen to be on this committee, the superintendents, that is the only way they get any pay.

Mr. Leach: Nobody owns any more than another; anyone is eligible, and we pay our superintendents meal tickets, and we get thousands of them.

Mr. Palm: Mr. Lauer, I want to beg your indulgence for interrupting you while speaking, but I really did want this point brought out because it seemed like a most excellent one.

Mr. Lauer: In regard to our superintendent's decisions in the judge's books the superintendent's decision is final. Of course, the superintendent is always supposed to be with the judge to a certain extent, but when decisions come in for final settlement if there is any complaint brought to the executive board in regard to the awarding of the premiums we make no decision in regard to the executive board. The superintendent of that certain department is first called in, and if he says there has been an error, or wants a correction made, then we mark and make the correction. In the livestock department, including their department, and it applies also to our horsemen—speed particularly. We have two teams. Now, this year our man that has charge of that, I don't know whether he has paid much attention to the horsemen or not. I don't know I am sure. But we have two teams on the ground all the time Monday, Tuesday or Saturday, or whatever the day happens to be. They are supposed to haul all crated hogs free of charge. The same teams we employ the full time of the fair. They haul the hay around to the different departments, and also pay particular attention to sanitation. We furnish the hay and straw, the first bedding, free of charge. We bed every stall in the fair grounds before the fair takes place. After that we furnish them the best hay and charge them for it. We furnish the distribution of feed.

This year we built a $3,000 cattle barn. The system we employed there was a matter of going around and soliciting. It was paid by soliciting, and by the hearty co-operation of the majority who were on farms. This year I had letters from our different breeders of hogs, and they told us they would go to work and raise a certain amount if we would increase the premiums in a like amount. We can not do that in one certain department, so, of course, we are going to do that all the way through.

In the matter of the system we have for policing the grounds, we have thirty-three policemen. There are only two instructions that we lay very particular stress on; the instructions are to watch for women of ill fame and for booze. If there is any occasion for any mistrust of anybody, we put a special watch for either one or the other. Those were the only special instructions given to the police department this year.

In the matter of a ticket taker, we had fifteen ticket takers this year. We have a system there whereby we go to work and change off. We do not ask one man or two men to be on duty all the time. We give them a relay. There is no place we could have fifteen ticket takers unless it was for the relay, and we pay them twenty cents an hour. We have the same man who has charge of the tickets and the gate, and he is also one of the executive board. He has been at it twenty years and he understands it thoroughly. He takes this work from the secretary. This year, I will say, I did not over-strain myself in regard to work, because every one of the superintendents was familiar with the work. Next year we will have the same working forces. But if you have a system whereby you can get co-operation it takes a good deal of work from the secretary.

In regard to ticket sellers, we have fourteen ticket sellers this year. We have three main entrances. The fourth is down by the horse stable. It is not called a main entrance. We have an automobile entrance, the main pedestrian entrance, and one where the teams come in. So, really, we have fourteen ticket takers. Now, in regard to the accounting system. The gentleman here said in regard to his tickets that they appoint a committee, that is, the man that has charge of the tickets and gates, that is the ticket gate treasurer. Our treasurer and committee on this has charge of the tickets and gates. Before the fair we find out how many tickets we want, the secretary orders them and as soon as he orders them he checks them to the treasurer. The treasurer has absolute charge of the tickets. The tickets are no more trouble to me, than it would be if we had no tickets at all. He checks up what he leaves in my office, and we make distribution of season tickets to the banks, and we only issue one ticket at that. Regarding the collection of tickets in the morning, they start both ways from this one gate, the main entrance gate. They are all locked, the automobile gate and the team gate are both locked. They start both ways. Every booth has to have a ticket the first morning. Everybody has to have an identification card of some kind. If it is a complimentary ticket or whatever it is, he has got to have some ticket. We issue pass out checks. We haven't the least bit of trouble. Our pass out tickets issue up to 1:30. Our evening entertainment comes at 2 o'clock. Pass out tickets are no good after half-past two, and we live up to it. Everybody has got to have a pass out check.

Our daily tickets are the same the season through, but the pass out checks are a different color each day. We issue four different colors, and everybody has absolutely got to have a pass out check, and these are no good after half-past two o'clock. We don't issue these checks to you to put on your coat, we don't use those at all. It is simply a pass out check proposition with us, and it is a matter of business with us to protect ourselves.

In regard to our method of accounting, I don't think it would interest you people. The way we have is just a simplified form of accounting. As far as the secretary is concerned, I have a cash book, and in that cash book is kept simply the receipts and disbursements. You have to figure mighty close to keep the disbursements from kicking you pretty close in the rear. We practice economy, but at the same time we do not restrict them to any certain extent in the different departments. In this accounting system here we have—I don't know as any of you people have one similar. If someone will just pass this around—we have a check here that is somewhat different from the majority of them. Now those checks, you will see that on the back of it are the items of account as we keep it in the cash book. Whenever I issue a check on the back of it will appear the same amount and for what purpose it is issued, and the amount will be the same on the stub, just the same as anybody keeps. When I go to work and make up my bank account I check over the stub. Just as soon as I get these checks I send them to the treasurer. When we strike up a balance if his balance does not correspond to my own, the same as with the different departments which appear on the back there, he checks it from both sides. If the amounts are equal—if the amounts in the different departments do not agree with my own, there is something wrong somewhere. That is the way we keep cash account. That is the check system. I don't know whether any of you use that way or not.

I have got down to the matter of advertising. Now we have here a pretty thorough method of advertising. Our advertising this year cost us close to $350.00. I think it was $333. I don't know whether that is large or small. Each one of our newspapers on an average gets two or three of these complimetary tickets. Now in the first place when our fair first started out, in a very short time, or in the spring we sent out what we call a tickler. That is what I called it. I don't know what you would call it. They read "Bremer County Fair, Waverly, Iowa." Any place that is adjacent that we think it would be profitable we send out these "ticklers." They are just as reminders that there is going to be a fair in that vicinity. Where we think there can be any advantage gained by letting the people know we are going to have a fair we send those out. Just as soon as anything new comes out we tell our papers. Anything that is local news we don't pay for it. The second process we use is our premium book. One of the gentlemen here spoke about his making a trip with his automobile. When I went on a large advertising trip I got seven automobiles, and we distributed this premium book over the county. It has 232 pages.

Now this is our stock certificate that we issued this year. In fact we issue it every year. On that same trip generally we make a distribution of the premium book, and we have this same canvas that I spoke about. We take those on the autos that make this trip. This canvas is 3x2 feet. On that it reads, "Bremer County Fair, Waverly, Iowa" such and such a date. We put that on the automobiles and make our distribution. These canvases cost $15 for 200. We used that last year and also this year. We used them more profitably as automobile displays. We didn't use them as freely as we wanted to.

This is the bill we used, and we had this on heavy cardboard. Besides this we used what are called bill posters that fit on the telegraph poles. They were two and one-half by about eight inches wide, in two different colors. We used those bill posters in two different colors, the white and black. We used white and red this year. We got them from the American Show Printing Co. We took them at the same time we distributed our premium books, and those seven automobiles that made the trip this year. When they got back the speedometers showed they went 1200 miles posting these bills and distributing premium books. And they did it thoroughly with the seven automobiles. I don't know as I was on that special trip or not. With the seven automobiles—six besides myself—we made 1200 miles. I went 122 miles that day and got back by night. Besides that we have what is called a window display. The window display is the shops of the others. We have forty-eight picture frames, and in every town we leave—in our own town we have only two, and in a town about the same size we leave either one or two. This is the one we used this year. Those are placed in the windows and you would be surprised to see how anxious people are to have them displayed in their places of business. There is a nice frame around these, and the picture gives a brief outline of what we are going to have. It has a wooden frame. With a string they hang those up.

There are cuts printed—we have them done there in our own fair. We have forty-eight of these frames and we take twenty-four and leave them in the different towns and bring back the frames for next year. We have twenty-four frames in our office down there that we will fill up next year and exchange with these people that have these circulars.

On the trip we made at that time we traveled in the aggregate 1200 miles. You take that advertising all the way through, with the cloth banners, as I say it cost us $15 for 200, and the premium book here. I would like to have you all look at it. We feel kind of proud of our premium book.

A Delegate: How much a page for advertising?

Mr. Lauer: We charge ten dollars for anybody in our town. Anybody inside our country like a merchant away from our town is only charged $8.00; but an advertiser in our own county, and still not away from town is charged $5.00.

A Delegate: What did you get out of it?

Mr. Lauer: Close to $400.00. The premium book this year cost $876. We got 5,000 of them.

The Secretary: What was the gross advertising in that?

Mr. Lauer: I guess that will show in the report. I am not familiar with that. I think our advertising this year was $1,200.00, we got for the premium book. We made a profit on the advertising of about $400.00. We don't pay a cent for the seven automobiles. We made the 1200 miles for general distribution. Every year we make it a point to get a bunch of automobiles together and make one special advertising trip.

A Delegate: And do you make up the premium books?

Mr. Lauer: We pay him so much. We solicit our own advertising. All they do is the printing.

A Delegate: Who gets out and solicits for the advertising?

Mr. Lauer: The secretary and one assistant.

A Delegate: What does the secretary get?

Mr. Lauer: Last year he got $75; this year he is getting $100.00 a month.

Just before our fair we take out a three column wide space for two days. We are trying to put that out so that the farmer gets it on Sunday. In our home papers and in seventeen inclusive of our own papers. In fourteen papers besides our own we issue this. There has been some controversy as to whether we could issue this paper as a supplement to the weekly county paper. For several years they have tried to charge for postage. But there has been only one exception this year. We took it up with the postmaster general. We issue a four page supplement that goes into seventeen different papers absolutely. They charge us all the way from five to seven dollars an issue. It is only one issue that it goes into, and that is about a week preceding our fair. This is entirely about fair matters. You have to have a certain amount of reading matter that does not pertain particularly to the fair in order to make it permissible in the different papers. You have to issue that as a supplement, for instance, to the Cedar Falls Gazette, or the Charles City Intelligencer. You have to issue the title page of the paper. These are all printed in our own town, and these different papers charge us from five to eight dollars—depending on their circulation. Only one paper has refused to issue this on account of the ruling in regard to issuing what is not a supplement to the paper. Some papers issue this every year.

A Delegate: I understand they charge you five dollars for putting that in with their papers?

Mr. Lauer: Yes; they fold it themselves.

A Delegate: You send the papers by express?

Mr. Lauer: Yes; and we pay them five dollars, the majority charge five dollars. A paper like the Charles City paper on account of the large circulation charges eight dollars.

A Delegate: What is the expense of getting those out at home?

Mr. Lauer: You mean by the papers?

A Delegate: No; the publishing of that paper you hold in your hand, what did it cost you?

Mr. Lauer: I can not tell you off hand. I didn't prepare those statistics to be familiar with them. I am not familiar with the statistics—not familiar enough so that I could give them to you off hand. I could have prepared something like that.

That is our system as near as I can tell you. As I say, we put about $333.00 out for advertising purposes.

Now in regard to the goods. You might have your co-operation and your system and this and that, but if you have not the goods you are going to fall down. We take particular care of all our different departments and try to install new things as near as we can possibly do it, and keep up with the times as much as possible. This year, especially next year, we are going to increase our premiums. We have been paying a general average. We haven't a large fair compared to what we have to draw from. We have only a town of close to four thousand to draw from in the first place. We have to depend on people coming from a distance, but we figure on increasing all our different premiums. This year we also had a baby health contest. All the way through we have free attractions and try to get the best we can. We have fire works three nights out of four, Tuesday, Wednesday and Thursday nights. We issue to the children 5,000 school children's tickets this year absolutely free. We always designate Tuesday or Thursday. This year on account of its being rainy we let them come in any time they presented these school tickets. Of course they got in anyway, the majority of them. But we issued 5,000 tickets this year, Thursday and Tuesday as the rural schools and the grade schools day. We have a day and night performance. The children's tickets admit to both.

A Delegate: What is your age limit for admission?

Mr. Lauer: Twelve years. Another thing we had at our place —of course it depends on whether you are so situated that you can do it—we have a camping ground, and we have worked on this camping ground and have finally got all the space we have had taken up by campers. We had somewhere in the neighborhood of eighty different campers. In one side we had fifty some devoted entirely to pleasure, and the other side about thirty of our exhibitors. We have two ideal spots, as far as that goes, for camping, and we lay special stress on the fact that people can come there and camp. We had over fifty in one place in our east corner of our ground that put in toilets and also electric lights.

A Delegate: How many acres have you in your grounds?

Mr. Lauer: We have close onto forty acres. We bought 10.6 acres this year. The thirty acres belong to the city as a city park, and we simply lease it. But this 10.6 acres we bought this year we built the new barn on.

The total attendance this year was 46,000. We fell down on the boys' camp this last year. We had some mix up and unnecessarily too. I wouldn't know just what to call it. But the board was just a little close last year in regard to paying, so they thought they would try a new system. So we didn't get started on this work as promptly as we should. The boys' camp didn't mature as we expect it to do in the future. We think the boys' camp is one of the leading features. We are laying special stress on it this year. We expect to put in a system to get the children interested. We have a junior department that is under the superintendency of a lady who takes part in the work and has charge of this work exclusively. They raise flowers, vegetables and those things. We give them a certain place in the hall where they can bring in the certain exhibits. We do not name to them what the premiums are; we designate that all school work shall be book premiums. The merchants contributed a certain amount. This year they said, We will contribute $20 in goods. When the premiums were given out I would write out an order, and if you win a premium of such and such an amount you are entitled to goods valued at so much at such and such a store. It makes a great deal less work for the secretary, and you do not have to designate what each article is. In the children's departments, graded and rural schools, one is on one side and the other on the other, and the junior department has one space in the hall. They are separate from each other, but still they work in unison all the way through, and the superintendent of schools has charge of one and the lady takes charge of the other. We furnish the children the bulbs, etc., free of charge. We have never had a separate and distinct colt show. While we have extended our premiums in our colt show out to ten premiums, still we have never made a specialty of the colt show, only extending the premiums out.

The same way in the corn department. We made a specialty of corn. We extend the premiums out so that each one will get something in the corn department, on account of the corn being staple or otherwise.

A Delegate: What is the nature of your night attractions?

Mr. Lauer: This year we had three: A trained horse, two people that put on an acrobatic stunt, and another thing. Our board was in favor of changing the attractions if we could. Of course we have fire works three nights. Of course we have band concerts. We have our own bands. We imported one for two nights, and had the other for two nights outside of our own. We have the fire works three nights, Tuesday, Wednesday and Thursday, for the simple reason that if it should happen to be a rainy night we should have one night to fall back on. I think that the fire works would be one of our leading numbers and would draw people in the day time with the expectation of staying nights. They have come as far as from Winthrop, forty miles and stayed at our town for the fire works at night. Perhaps you noticed the picture taken at night.

We charge twenty-five cents after four o'clock. This year we only charged fifteen cents, but it was an error on our part because we passed a resolution last year, and a few of us didn't know anything about it. We charge fifty cents to the grand stand, and ten cents extra for reserved seats.

A Delegate: Have you any family tickets?

Mr. Lauer: We have a season ticket, season transferable ticket. It makes so many people dishonest to have non-transferable tickets that we have cut them out. We charge $1.25 for transferable tickets. We have no non-transferable tickets whatever. The transferable tickets are sold at $1.25. Our flower hall is large, and has seven thousand square feet of floor space, and we have never been able—we have had to turn people away. It has always been crowded from the time we first built it—seven thousand cubic feet of floor space.

A Delegate: Will your admission be more next year?

Mr. Lauer: No, sir; not if our board can prevent it. We are organized for no pecuniary profit, and we are doing well as it is. I have talked with the majority of our board and they feel that if we went to work and increased the price of admission it would cause dissatisfaction. A person can go into the fair and have fifty cents, and he can see the whole thing. There is no extra cost unless they want to indulge in the other pleasures.

A Delegate: I understood there was a ruling that would go into effect that all fairs charge fifty cents.

Mr. Lauer: Not that I know of.

I took a clipping from a Des Moines newspaper the other day, and I think it is applicable to all fairs. Here it is:

> To the person who has had a little experience and a good deal of instruction regarding the matter of success it must come, after all, as an ultimate conclusion that the thing lies largely with himself and his own continued and permanent desire. There is no royal made-to-order road to attainment of most deserving sort. There is no one cut-and-dried formula for the would-be successful. What is one man's joy is another's dissatisfaction. Regarding the things most worth while in the world we have to form our own conclusions and regarding the way of their accomplishment we must also exercise a large measure of individual choice and initiative and consideration.

In conclusion I would say this year we have placed in our premium books this peom here entitled "Keep a Pullin'."

It follows:

Ef the tide is runnin' strong, keep
a pullin'!
Ef the wind is blowin' wrong, keep
a pullin'!
'Taint no use to cuss an' swear—
Waste your breath, to rip an' tear—
Ef it rains or ef its fair, keep
a pullin'!

Though it's winter or it's May, keep
a pullin'!
Ef you are in the ring to stay, keep
a pullin'!
Though you can't see e'en a ray,
Sun is bound to shine some day;
Got to come fore long, your way; keep
a pullin'!

When you're sick an' tired, too, keep
a pullin'!
Never 'low you're feelin' blue; keep
a pullin'!
Ain't no good in blamin' fate,
'Cause you're workin' hard and late;
Better say you feel first rate, and keep
a pullin'!

S'pose you haven't got a cent—keep
a pullin'!
Not a red to pay the rent? Keep
a pullin'!
Gettin' "busted" ain't no crime!
Gorry 'mighty! That's the time
Grit will make a man sublime! Keep
a pullin'!

Can't fetch business with a whine;
keep a pullin'!
Grin an' swear you're feelin' fine, an'
keep a pullin'!
Summin' up, my brother, you
Hain't no other thing to do;
Simply got to pull 'er through! So
keep a pullin'!

The President: Is there any further discussion of this paper? If not we will go on with the next, "Getting the Crowd Every Day" by Dr. L. W. Russell of Anamosa. But I discover that Dr. Russell is not here, and in his absence Mr. Rigby will make a few remarks on that same subject. I am sorry Dr. Russell is not here.

GETTING THE CROWD EVERY DAY.

BY A. G. RIGBY, INDEPENDENCE.

Mr. President and Gentlemen of This Association: I asked Dr. Russell to discuss this topic of Getting the Crowd Every Day because they have the faculty of doing it down at Anamosa. A great many people are under the impression that you can only have one day at the fair, and that is usually Thursday. The Anamosa fair is run along different lines so far as I know from any other fair in Iowa. They run it strictly as an amusement proposition. They don't make much of an effort to get exhibits. They put on a strong, rousing program, well interspersed with vaudeville and acrobatic attractions, and they have gone the last two years pretty strongly into special premiums. It is a system that I do not exactly approve of; that is, for a fair that is well established and well organized like some fairs that are represented here today, like the fairs at Mason City, Marshalltown, Waverly, Bloomfield and quite a number of fairs; but for the fair that is getting started it seems to me that there are some ideas to be gained from the way they do things at Anamosa that are well worth while to try. Now you all know that this is a time when people are getting to expect more and more. People travel more or less and they see a good many things, and the people expect a good deal of the county fair. And they have reason and right to expect something. It does not make any difference how good a premium you pull off or what your goods are, if you do not get the crowd it is not a paying proposition. You cannot afford to load up on strong free attractions and a good program and then not get the crowd, because if you do you are going to run in the hole, and you have got to get the money.

Now at Anamosa they go pretty strong on what they call their family tickets. I don't recall the price, but I think it is a dollar, and it entitles every member of the family to go to the fair every day. It is a low priced ticket and lets in the whole family. Then if you can get the crowd you can make the fellows come across strong for the right to do business on the grounds. They get a big price for the merry-go-round, and a big price for various other things. I remember a few years ago when conditions were different with regard to the liquor interests, they used to run a German Village down there, and they used to get $500.00 for the German Village. But they have cut that out. And some years ago they ran some pretty wide open gambling joints, and they used to get $1,000.00 for that; but I think they have had to cut that all out. But they have another system of getting the crowd. They have given away a good many things the last few years. They have given away an automobile. Somebody got an automobile. That was the strong drawing card for the last day. They still have what they call the family tickets, and they sell a good many on the strength of that. Some of these ideas I worked out at the Buchanan County Fair in the last two years. I had some ideas this year and was over to Anamosa and talked them over with Clifford Niles. He is a "live wire," one of the directors of the Anamosa fair. There were some ideas I had thought to try out myself and I didn't have the opportunity to do it, but Niles did. He improved some of the suggestions. He ran what they called a Country

Store, and for the advertising that the local merchants got out of their contributions to the store, they got a good many dollars' worth of free premiums. And then they gave away some ten or fifteen articles of value to somebody that was in the amphitheater every day of the fair. They have a large amphitheater there and it holds a good many people. It meant a stimulation of the sale of tickets for the amphitheater. In fact all the seats were sold, and they sold standing room in the theater.

Now in regard to the character of the articles they gave away and the way they did it, it was like this: They would give away from ten to fifteen articles each day, and I think they had thirty-five or thirty-eight articles contributed. For instance, one merchant contributed ten sacks of flour for the advertising value they would get out of that. Another would contribute a sewing machine, and another a washing machine. Then a box of cigars, and articles of different values, and of course some jokers. Then these tickets that were sold for the amphitheater each person got a coupon. They were perforated so that part of them went into a box and part of it they retained to identify them as the holder of that number. Then these numbers that were dropped into the box were all stirred up and some child was selected to draw them, and the first one that was drawn out, suppose it was 728, whoever held 728 got article number one, and these articles were all numbered. That might be ten sacks of flour, or it might be a box of cigars, and so on until the ten numbers were drawn. And in that way these goods from the country store were distributed. Sometimes it was a dress pattern; for instance some old bachelor would get a dress pattern, some old lady might draw a box of cigars, or some little child a washing machine, and so on. But these things could be adjusted afterwards. In the main the articles went to very satisfactory destinations, and it is an idea that a person could talk about a good deal and enlarge upon, but to an audience of this character, a suggestion is all that is necessary, and you can readily see the advertising benefit that a scheme of this kind would be, and the drawing power it would have. Anamosa has a fair that is well advertised. They follow circus methods sometimes in their advertising, and do a good deal of spectacular advertising. They use the bill board a good deal as well as the newspapers, and they use the holder—that is, a hanger, something like this. Now, as I say, some of these ideas were some that I had in mind trying out myself, and I talked them over with Clifford Niles, I think that the one point he worked out to great advantage was the making of these gifts—this distribution to the people in the amphitheater. Of course, if they got into the amphitheater they would have to be on the fair grounds, and this was made a feature of the fair every day, and they have the crowd every day. The last day of the fair they had a big crowd, and it was a thing that paid them well in their advertising.

Now right along this line I want to say that some of these methods of distributing gifts are barred from the mails, and wherever they were they took great care that they were distributed by hand—hung up in the stores and distributed that way, so that it did not get into the mails at all.

That is a brief outline of what Dr. Russell would tell you if he were here, I think.

DISCUSSION.

Mr. Reeves: The Anamosa fair is very good, but I want to ask each one of you if you think success is well earned if it is earned in that way. Don't you appeal to a characteristic in people that is not the best? Hadn't you better do it in some way that will elevate rather than appeal to the gambling instincts in a person? It strikes me that way. I may be entirely wrong on that, but we try to make our fair just as educational as possible. The educational features predominate in our fair. Now our secretary did not have the time to touch on those features, but those are the predominating features in our fair, and we give our premiums for some worthy purpose, and have some good in mind rather than to induce a person to try to get something for nothing. We want a person to show that he has some possession worthy of reward. Now isn't that what our fairs are for primarily, and shouldn't they be for that purpose? The Anamosa fair has succeeded in a certain line, and in a certain way they have secured the attendance, but I regret that the fair works on that line. I would rather see them work on these other and different lines.

Now gentlemen, there is one remark I want to make while I am on my feet. I was asked about the compensation of our secretary of the Bremer County Fair. He stated that he received $100 per month during the year. That is his salary for the coming year. We can well afford to pay for that. He spends all his time. We did not send to Sears-Roebuck for our secretary. He is a whole quantity and worth what he is getting.

The Secretary: In the remarks I have just made I possibly have conveyed a wrong impression. I have had a somewhat extended correspondence with quite a number of fair secretaries in Iowa, and any fair secretary in Iowa who has had correspondence with me knows that fundamentally I believe that no fair can thrive and be permanently successful that is not built on the broad basis of education. I believe that is the foundation that should be laid. I am going to tell you frankly that the Anamosa fair is not my ideal fair. I simply mention this as one feature. I like a fair like the Waverly fair, the Marshalltown fair, the Mason City fair, or the one at Sioux City, and many others that I could name that are well rounded out like up at Rock Rapids, and down at Mt. Pleasant, Harlan, and different places where I know something about their work. It should be strong in all departments. No department should be overlooked. But as I said, in starting out, it does not make any difference if you have the goods, you have to do something to get the crowd. There are some of these things that can be worked out in a place where, on account of mismanagement, your fairs are in disrepute, and the public is giving you absent treatment. You have to do something to win back their confidence. You can gradually grow out of that thing. You can quit that. That is not suitable for the Marshalltown fair, or the Waverly fair, or the Rock Rapids fair or Sioux City, or any of those fairs that are established on this broader and better basis, and I simply make these additional remarks because I do not want to be misunderstood. I believe in the educational fair, in the exhibits, but I think that entertainment should not be overlooked. You know that people do like to get something for nothing.

Delegate from Sutherland: I wish to make inquiry in regard to the remark I made a moment ago with reference to admission. In some paper of state repute I saw something to the effect that all fairs that received state aid in their association should charge fifty cents admission. Our board has that impression, and thought that was so, I wish to take home if that is or is not so.

Mr. Corey: This might have been a newspaper report, but I don't think the state law has anything to do with the fixing of the admissions. I think it must be left entirely with the local association.

A Delegate: I would like to say one word in regard to admissions. We feel that with us thirty-five cents is enough to charge for a county fair. When you go to the state fair you expect something bigger and better, and you expect to pay fifty cents for it. It ought to be worth the money. While we have been urged to increase our admission fees, I am one of the board and am speaking as one of the board of the live fair at Waverly, and am content to keep our admission at thirty-five cents. We don't want people to think that we found we could have a successful fair on thirty-five cents, and then we must now have fifty. We think as long as we are successful at thirty-five we will continue at that price.

About family tickets, a year ago I was a member of the board of the fair in Bremer County, and they issued family tickets, and I want to state that it grew so much that it killed that fair. It was like the old lady who got off the train one time. She had with her her children, and she had a very large family, and they all trailed off in a line. Some fellow standing by came up and said, "Pardon me, is this a picnic or are all these your children?" Said she, "Yes, those are my children, and I tell you it's no picnic."

Mr. Corey: For the information of the delegates I have had published a little pamphlet here in the state department compiled from the reports of each of the county and district fairs. There is some information on page 12 on admission of vehicles, children, etc., at the outside gates, and by referring to that you will see the different admissions. There were eleven fairs charged fifty cents, sixty-seven, thirty-five and eleven, twenty-five cents. And it gives the admission fee to each one of the fairs.

Delegate from Marshalltown: I was in hopes when Mr. Corey rose with that pamphlet in his hand he was going to show the attendance at the different fairs. I would like to call attention to the fact that the Anamosa fair with their free and open way had an atendance of 15,000 this year. Probably fifteen fairs in the state that had a real fair went away ahead of that—some of them three times that number.

Mr. Palm: I am always surprised at one thing, and that is that a fair of such apparent and various excellencies like the Anamosa fair should still bum along with that family ticket. I don't see why they attach that dead weight on their system. Of course the family ticket, as the gentleman here said, is a handicap. I had supposed all fairs had gotten rid of that long before now.

The President: The next topic for discussion is a very important one. It is "Free Attractions" and will be handled by H. C. Leach of Bloomfield.

FREE ATTRACTIONS.

BY H. C. LEACH OF BLOOMFIELD.

Mr. Chairman and Secretary: I have no big paper to pull on you. I am not going to keep you very long; but what I have to say will have to be largely from our own experience in our own fair. We are one of the fairs that still issue the family tickets. Possibly we are old-fashioned, but we have been running five years, always paid the premiums in full and never discounted a man. We own the ground, thirty acres, and the buildings, and they are all painted with white lead. They are not whitewashed. And they are all on stone foundations. When the Davis County Agricultural Society organized it was along this line, and we sold the family tickets. It admits the parents, that is, the man and his wife and unmarried children under twenty-one. If there are any of his children who are under twenty-one and married we do not admit them. It gives you a good crowd every day. We have pretty nearly as good a crowd on Friday as Thursday, and all the way through our fair. Now our admittance is $1.50 for our family ticket. We generally sell in the neighborhood of a hundred on an average every year. Then our admittance at the gate is twenty-five cents. Our admittance for children is fifteen cents over twelve years of age, and our grandstand is ten cents; the quarter stretch is forty cents. We get from $85 to $150 a day out of the grandstand. We are a small fair and not jumping up as against the state fair. We get the same amount from the quarter stretch. We admit the vehicles into the arena free, and charge ten cents for all the occupants. This year we got $146.90, I believe it was, out of the grandstand on Thursday, and $146.70 on Friday, so we run pretty close together.

Now as to the free attractions: One of the main things I have found in regard to free attractions is to be sure and have your attractions. Do not advertise something and then not have the goods to deliver to your people. Now I know a neighboring fair on the east known as the Milton fair. Two years ago they had a contract with an aeroplane man for a free attraction, and he was at Memphis just two weeks before. He was at Newton next and he met with an accident and consequently was killed and could not be at Milton. There are people to this day at Milton who do not believe they had a contract with him, but I absolutely know, because I saw his contract. He came down to contract with us and we sent him to Milton and he contracted with them. Then the man lost his life; and there are still people all through that country that hold people responsible for his not being down there. He was killed and he could not come there. I would advise you to always contract with some responsible house for these things that will furnish the goods. If one gets killed they can shoot out another. About five years ago we had at our fair a dirigible airship. Some thought it didn't do us much good. We had two rainy days during the fair, and we had it in an immense house. On Wednesday he made a nice ascension. He sailed west of the city and back over the fair ground. Thursday he made almost an entire failure. The machine would not work, and you know how it goes. Friday he made another ascension and sailed over to our neighboring city, Ottumwa. Late in the evening something got out of order and he had to descend and they went out and got him. I considered that the money was well spent. We paid him $800.00.

The next year we tried different attractions. I believe it was four years ago. We hired a Japanese troupe. They were certainly good. Then we had a hay rube act to please both sides of the people. But the Jap and his wife do stunts that will make any of you take off your hat to, and they are nice, clean people. The next year we had something along the same line. On the evening before the fair, Monday, we got a telegram from a company we had hired—the Nelsonites Troupe—and we got a telegram stating that one of them was at the point of death and they could not come, but they substituted a better troupe, more expensive. We called a committee meeting that evening. Some of them thought it would be suicide to take another troupe. They were an English troupe. We had them come and the public were not disappointed. They came on and were a fine troupe and did good work. This last year we recalled the Japanese. The boys thought he would not do, but I want to say that he gave better satisfaction than ever, and the people were well pleased with it. But we don't have to have at our fair large free attractions because we still have the cattle and the horses, and the hogs and the sheep and the chickens, all kinds of poultry. We had something over fifty head of cattle and about the same number of horses on exhibition this year, and something over three hundred birds. I made the entries myself and I know there were over three hundred fowls there, and sheep and hogs in proportion. We have an expert judge to pass on all the stock. It is the same way with the poultry. We used to have the ladies do that, the superintendent of the department would select two or three ladies and then the neighborhood would get it in for some woman and no premiums would be given. Miss so and so might be mad at one of the judges or something, and it didn't work out very well. So we sent away and got an expert.

We have never since hired anyone closer than a hundred miles to our town, and since that we have never had any trouble. If the three superintendents could not agree we called in the fourth, and what he said on that is final. But the main thing in regard to free attractions in my opinion is to get just as good as you can. The people will not put up with trained dogs and a trained pony and one thing and another of that kind. We used to have them years ago, but they won't stand for it any more down our way and I don't think there is any exception. You have to give them something that looks good, and something they don't see every day of the year. As to the quality of it, get the best, or just as good as you can. There is nothing too good, and be sure, above all, to deliver the goods. Do not advertise some attractions from some house that is not responsible and have them turn you down.

I was over to Brother Baker's fair at Eldon. I don't think there is a better secretary in the country than H. W. Baker. He had an aeroplane over there, and I don't believe you could have found a bigger crowd. The aeroplane did not come for some reason or other and they are cussing the fair yet about it. They made a much bigger howl than they would had they never had the machine. There is no use. I was talking to a man two or three weeks ago, and he said he didn't think they ever had a contract with the man. I said, "Don't criticise that way. They had it advertised to appear, but sometimes you get fooled." Get your attractions from fellows that you can depend on. If a man fails to show up you can't make people believe that you did not do it intentionally.

As it is getting late and we have had quite a lengthy discussion I don't believe I have anything more to say on the subject this evening.

The President: So far, I believe, the program has been decidedly interesting. At the present time we have reached the turn. From now on we will come down the home stretch. The next thing on the program will be the discussion of the Speed Program at County Fairs by S. C. Culbertson, Jefferson, Iowa.

SPEED PROGRAM AT COUNTY FAIRS.

BY S. C. CULBERTSON, JEFFERSON, IOWA.

Horse racing, as near as history records this subject, began about 2,500 years ago, or between 600 and 700 years B. C., and from that day to this it has had its place among sports and amusements in all civilized countries and nations of the world. It has also been condemned by the church from the very beginning, and even to the present day there is a considerable feeling of antipathy against this form of amusement. Most of us here assembled can recall the time when the objection to this form of amusement was greater than at present, and you can also recall when church organizations were threatened with disruption because some progressive leaders among them ventured to suggest the use of musical instruments in devotional exercises. While there may be some few who honestly and religiously condemn this feature of our fairs, and others who dislike racing for the same reason that they take no interest in other popular forms of sports and amusements, horse racing is the one feature that has become more popular among the masses as time advanced. To my mind no entertaining feature of our fairs has endured the time, and so attracts and interests people generally as a speed program. I am led to believe this from the interest taken, while the racing is going on. At our own fairs I have frequently called the attention of our directors and others when it could be noticed that at least 80% of the attendance was watching the races each trying to get a position better than his neighbor that he might be better able to see every move made by the horses in the contest.

Recall, if you will, the thousands of people who annually attend the great Iowa State Fair, and the thousands of them who pay the extra admission to the grandstand, the most of them for no other purpose than to see the racing.

What one thing could create more interest and enthusiasm in connection with our fairs than the appearance on the streets at home at fair time of about 100 or more blooded and well groomed horses entered for the races? And what in connection with fair management causes the officers more discomfort and humiliation than to be compelled to say that some of the classes have not filled? There is only one thing that I can think of, and that is to have some of your entries at the last minute fail to appear at all, and to learn that some unscrupulous secretary has been to the fair just ahead of yours and bribed some of your entries to pass you up and go with him that he may be enabled to put on a hippodrome at his fair.

Methods of this kind should be condemned by every honest fair officer, and admirers of true sport generally.

Admitting now that the speed program is the backbone of the entertaining features of our fairs, why should the practice of charging an entrance fee for horses be continued? I for one am in favor of its complete abolishment, and can see absolutely no excuse for its continuance.

Why should owners of racing horses be compelled to spend their time and substance in preparing their animals for our amusement and entertainment and then be compelled to pay a license of 5% of purse money for the privilege? It is a practice of long standing, and was put in use at a time when fair managements said to the horsemen, if you want to race at our fairs you can do so but for your own money.

Do away with the entrance fee, and compel as near as possible, honest racing. Let the best horse win, and not have racing an occasion for sharp practice and trickery. Make every heat a race.

It is only simple and plain common sense and not mock piety to say that the man achieves the best and most satisfactory results, who makes it his cardinal principle, to be just and true in all his dealings, to wisely and honestly earn his living in that state of life it has been his fortune to be placed.

This can be applied to racing as well as to any other line of business.

I am not attempting to mix sentiment with racing and fair management, but we should not close our eyes to the fact that the pleased and contented patron of our fairs is the one who has been consistently treated with the courtesy and justice due him, and who reciprocates with a personal liking for true, honest and manly sport.

We can afford to lose all other entertaining features, but we cannot lose our horsemen and their noble animals. Our interests should be first and last with them.

The President: We would like to have some discussion on some of the points brought out by this paper. There is plenty of room for argument. There are plenty of horsemen here to defend their side of the question, and the fair secretaries ought to be able to take care of theirs.

DISCUSSION.

A Delegate: I would like to know how many fair secretaries there are here who are conducting their fairs without any horse races. Nobody seems to stand up, so I guess I am the only one. That is possibly because we are just getting started.

A Delegate: I would like to ask how that fair shows up in the pamphlet, Mr. Corey got out.

Mr. Hemmingway: I have been so unfortunate as to be superintendent of speed in Franklin County for many years. I suppose it was put on my shoulders because years ago I used to indulge in the horse game a little myself. I enjoyed it and I enjoy the horses now, and suppose I always will as long as I live. But the thing I came down here to learn today was how to make a successful entry list for that fair. During the last year we advertised extensively—more than we ever have before. We offered better purses than we ever offered before, and ranked right up with the whole community, and not a single race paid, so, as a last resort we came down to Des Moines and got a lot of runners who gave us entertainment every day. We had running races, but no trotting horses. Of course I know there were other fairs in session around us who had some races, but I think that the great majority of them failed to get the number of entries they wanted. Now the key note of the article that was read here with reference to entries was that we make the horsemen run for their own money. I join in the sentiment of the writer who says that the greatest attraction—one of the greatest attractions, greatest drawing attractions to all of our fairs is the racing. We all enjoy it. There is one criticism I must make on some fairs, and that is in allowing some other entertainment to interfere with the racing that is going on. It is a very common thing, I know, or, quite common to have a ball game, base ball game coming on at the same time. You can not look at both nor enjoy both. It would be about like putting a wrestling match up on one side of your theater and the regular performance going on at the same time. I believe when the racing program is on it should have the floor, and then people who are giving attention to the ball game or some other game will give attention to the races, and you can not have anything popular and enjoyable unless the whole crowd takes to it and likes it, and the crowd can not take to racing unless they have an opportunity to see it without interruption. I believe that the speaker struck the key note when he said we ought to reduce the entrance price, if not entirely do away with it. Of course the horses must be regulated and have penalty attached if they fail to come after entering, but it seems to me that horsemen can not fail too much. It is impossible, if you consider the matter from a financial standpoint, for all the horsemen to win. Some must lose out. There isn't money enough to pay them all, and the good horseman has to be a pretty good sport. I would like to hear from some of the secretaries who have been successful in getting full entries, and have them tell us how they do it.

Mr. Reeve: This whole proposition in life is a gamble from beginning to end, and above all else the horse race is gambling. We can not dodge that point. The secretaries who are running these fair associations are interested; it is a business proposition. They are interested in making that association a success. If they have to look after the financial part of them. The man that holds the horse is running that horse for the money he gets out of it. Both of them are engaged alike. As you say some people must be successful and others must lose. It is the same way in any business, as well as the horse business. Some will win and some will lose. I will admit it is pretty hard for us to fill our speed program. We have always managed to do it, but if you take away the money we receive from these entrance fees we would have to quit business.

A Delegate: Now I am not going to say whether it should be taken away or whether it should not; but as regards racing for your own money we have never had entries enough to race for their own money. This year it cost us $1,400.00.

A Delegate: What per cent did they pay?

Mr. Lauer: Ten per cent.

A Delegate: What per cent of the first offer did the horsemen pay and you pay in advance?

Mr. Lauer: We took in $405—our report shows $500.00, with the driving. If there is anything made out of the driving association when they have their spring meeting they give us pro rata share for the use of the buildings and grounds. This year they gave us $100.00. Our receipts show $500.00, and our expenditure $1,700.00. So we did virtually pay $1,400.00 toward speed this year, above everything we took in in regard to entrance fees. It looks to me this way: There is not a thing in our fairs but what they pay an entrance fee for, with one exception. They all have to pay either by buying a season ticket or some other way. And as this gentleman just said, if they haven't got the goods they can't get a piece of the money. We have never had enough entrances so they could race for their own money. This year our free attractions in this line cost $1,400.00.

Delegate from Marshalltown: I want to ask Mr. Lauer one question. His races cost $1,400.00. I would like to know how much more they cost than the rest of the program cost them. Tell the rest of it.

Mr. Lauer: The rest of the program is essential as a free attraction.

A Delegate: In other words it cost you nothing. If you had not had the races you would not have had the grand stand. Your grand stand amounted to a great deal more than what your races and free attractions did.

Mr. Lauer: Undoubtedly.

A Delegate: In other words, a man could take your grand stand and quarter stretch privileges and leave out the fair and make money—taking that as a separate proposition. Just take your free attractions and your races and make money from the grand stand and quarter stretch.

Mr. Lauer: I will answer in this way: Our race people there have no expense. They keep no buildings up; they have no expense in putting up and taking care of the buildings. They have no expense in regard to the electric light; we keep that up. This year they gave us $100.00 and they are in debt right now.

A Delegate from Marshalltown: I am not talking about the racing association, but simply your fair. They have helped put a live fair on the map. Cedar Valley has helped you wonderfully and you ought to appreciate that.

Mr. Lauer: You ask me for a comparison of what the races did for our fair. This is what the races did for the fair: They didn't pay out after the fair. That is what the races did.

A Delegate: They are going to give races without the fair next year?

Mr. Lauer: Yes, sir; but they do not pay out. It cost us $1,400 as a free attraction. I am not in favor of eliminating them.

A Delegate: When you said this cost you $1,400 this grand stand more than paid for anything that was seen out of the grand stand. Without these races and free attractions you would have had nothing in the grand stand.

Mr. Lauer: We had a race meet, and we had a fair with the race meet, and the race in itself did not pay out, and they had no expense.

Delegate from West Liberty: Mr. President: I did not come here to hear discussed whether it was going to pay to have races without a fair or fairs without races. What I would like to hear is the best way to have a race program. That is what I want, and now I would like to ask some of these horsemen here their idea of a good race program, and how you are to go at it to make it a satisfactory proposition.

Delegate from Marshalltown: I can answer this whole proposition: Give these race horse men the money that it is worth to come to your fair.

Mr. Joe McLaughlin: It may be that we get what we are worth or what we are not worth; but I think that if every fair association would notify us before we go whether our races are filled or not it would help a great deal.

I think the fair managers assembled here will agree with me that racing and vaudeville and amusements of all sorts are the features that attract the crowds to the county fair. People do not come for education to the county fair; they come for amusement, not education. This education talk is all a joke. Those pictures on the slides show it is. They come to be amused, and they are willing to pay to be amused, but they want high class amusement, they want their money's worth. On these slides today you could see where the crowds congregated. You could go to the agricultural buildings, and so on and you wouldn't find very many people, but did you see the immense crowds around the grand stand? We all know better than to think they come for education. They come to be amused, and we want to amuse them. People are harder to please than they used to be. They are willing to pay for high class amusement. There was a time, however, when a few horses could come on the track, maybe one fellow would have a red shirt on and no suspenders, and another fellow would come out with a stiff hat on, and that used to amuse the crowd. Some fellow would get up and say a funny thing and another would slap him with a slaparatus, and that used to amuse the crowd. Then you wonder why they don't come to the county fair. It will be perfectly plain to you when you have attended as many as I have in the last thirty years. They don't like horse racing you say? Then you don't understand what horse racing is from a racing standpoint. Now a man who has been around, he comes to take his family or friends to the small county fair. There is always a big crowd to get in there. He goes to the hotel and the hotel is crowded. The clerk says, "I will give you a cot in the hall for $3.00," and he would have to split his family up. Then he takes a ride on a tumble down hack over a long dusty road to the fair ground. There are a few barkers and a number of grease joints along there. He goes up to the grand stand which probably had not been swept out since the year before and all that sort of thing. And then they will hear music. Gentlemen, I have heard a good deal about good music. There are some of those fellows who would not know music from a boiler explosion. Then some fellow will get up and tell a joke of some kind that almost caused you to kick the cradle over some fifty years ago when your grandfather told it. Then some fellow—some blatant mouthed auctioneer that has handled a few country sales will get up and announce in a loud voice the races, and three or four horses come out and race up and down the track. The band will play a song and then there will be a hurray, and a cloud of dust will fly up and cover some lady's gown, and then finally you look out and you can't see one of the horses. You send a fellow out to find him and he returns and says he can't find him. After the race you ask one of the fellows where he came from and where he raced before and he says, "Why, the secretary just gave us $15 to start here." Can you blame people? Do you wonder why you can't fill the grand stand for that kind of entertainment? People won't stand for it. They want to be amused, and not educated. It is human nature to always be ready to tell somebody else something. These people came there for amusement, and there is no question about that. And I think races and vaudeville and free attractions of that kind are what get the crowd. I heard the man from Carroll, I think, saying that the aeroplane was not an attraction now, etc. Why racing was popular sixty years before the Christian era. There may be men in this building who have seen races since boyhood, and they liked them better every time they saw them and wanted to learn something about them. Give men enough money to bring decent race horses. Give them some chance. How many secretaries here today have a barn that if they owned a ten thousand dollar horse they would be willing for him to sleep in over night. If they owned a good horse how many have a barn of that kind? How many here have suitable toilets? How many have a grand stand that they would want their wife to wear her best gown in, and all that sort of thing. We have been up against the worst game in the world. That is the way it goes. You have to make things attractive, and you have to amuse the crowd. It's amusement they want, and the higher class of amusement the better.

Delegate from Decorah: Along the line just now referred to about charging an entrance fee, the system has got to be changed a little bit. The cost of training horses has increased, and the good horses are getting more valuable all along that line. No, sir; there is no department in the fair charged so much. They charge the other fellows $2.00, while if you have $300.00 for racing and a man wins it, it costs $30.00. That is the difference. This free attraction business is, as Mr. McLaughlin says, getting to be absolutely an entertainment proposition. Why do you charge $30.00 for the horsemen? Why do we have a $300.00 vaudeville act and not take out 10 per cent? We should make this line so popular with the people that they would go there to be entertained by raising the vaudeville and giving the racing men the purse the same as we do the vaudeville.

In regard to the horses, there are only so many of them. The fairs all come in the month of September. There are ninety fairs in Iowa and eighty of them are in September. The horses can't live on air during the summer. There is only one race a week in Iowa during the summer, and then in September come eighty races. You can't make any horses for that week. You might encourage them to train more horses for the rest of the time if the entrance was not so heavy. And you want them as an attraction feature. They will not disappoint you as much as the aeroplane men. Heretofore you have got them here, five $300 classes, $1,500. $1,500! A few of the board of directors have fainted. Suppose you take $600 off of that, and that leaves $900. Now then you bought three or four vaudeville acts and paid $1,200 or $1,500 for vaudeville acts, and the racing cost you $900. You are looking at it wrong. These men that race horses do not come there to sell the horses. They are not stallion men, they have no calves or pigs to sell. You must realize the difference. They are for entertaining. It is a business with them, the same as vaudeville is business with the vaudeville people. You have to think along that line.

Vaudeville Man from Chicago: The only instance I have known in a life time in this show business where a count was put on this thing was at an exposition in Canada. The question arose as to whether or not they should cut out the vaudeville, races and the foolery. The Canadians are a serious minded people. I think it was in the House of Parliament. Anyway, the thing degenerated to a one-horse circus. It was started to be an educational proposition. It was a very bitter discussion, about equally divided. They finally determined not to take the matter up, but to put a count without telling the show men or the horsemen or anybody. They put a counting machine in the pocket and the man pressed it on every person. Anybody that entered they counted one. Anybody that left the building was counted out. Now, for every person that entered the educational part there were nine went into the field. They had to go around to the front of the grand stand where the horses and vaudeville and fire works were held. Back of the grandstand there was the educational part. There was nothing in front but the horses, fireworks and vaudeville. At the end of a week the count averaged nine to one.

Mr. McLaughlin: Could they get in to see the vaudeville free, or did they have to pay extra for that?

Delegate from Chicago: They did not have to pay to go into the educational building.

Mr. McLaughlin: What do you suppose would have happened if the price had been the same?

Mr. Culbertson: I would like to hear someone give some good plausible excuse for paying entrance fees. I have heard none yet.

Mr. McLaughlin: For the benefit of the gentlemen, I believe I can tell about the only excuse. We have the American Trotting Association. In other words, they are the collecting agency for the different fair associations from the horsemen. They are the ones that formulate all the rules, by-laws and things that we race by. They charge 10 per cent. to collect the entrance fees from myself or Mr. Wods, or any of us that happen to be delinquent or failed to get there. That is the main reason why we have the entrance fees, through the American Trotting Association, a collection agency at Chicago.

Mr. Culbertson: As far as that is concerned, our fair association has never used the American Trotting Association as a medium for collecting anything of that kind. As long as I am the secretary of our association we never will.

Mr. Woods: I would like to ask the secretary how many secretaries are like him.

Mr. Culbertson: I am giving my advice.

Mr. Baker: The free entrance, I think, would be out of order entirely. If he didn't have to pay an entrance fee the racer could enter at half a dozen other fairs, but if he has to pay an entrance fee he will not enter at half a dozen other fairs, and we would have some assurance that he would show up, and I don't think free entrance would do that.

Mr. Culbertson: I would like to have an expression from this body as to how many secretaries here, or representatives of their home associations charge stall rent during fair time or any other time during the year? I see there are seven.

How many charge rent after the fair is over and during any other time of the year?

A Delegate: The state fair is the only one.

Mr. Harvey Woods: Gentlemen, a few days ago I received a letter from Mr. Rigby asking me to appear here before you and tell, as best I could, what will insure better racing.

Now, there are a number of things that I think would insure better racing. The first thing I would suggest is larger purses, better race tracks, good stabling, and competent judges in the stand. Prompt payment of purses, food on the ground at market prices. And there are a great many things that I will not mention.

In the first place, there is no man that can afford to race a horse for a little, measly $300.00 purse and make any money. That is out of the question. Deduct five per cent. entrance fee from this and you earn $120.00. That is a lot of money. $120.00 to earn with a horse that has probably cost in the neighborhood of $1,500 to $2,500 to make him so he can earn that much money. Now, there are a lot of fair associations that think they ought to have good racing for nothing. I do not mean to say that they do not want to pay what they agree to. Some of them won't do that even, but there are a lot of them figure that they can not give more than a $250.00 or $300.00 purse. Well, anybody that knows anything about the racing game, that has ever trained horses, or raced horses for a living, knows no man can train a horse and make money out of that kind of racing. The thing they must do if they want to get good horses and have good racing is to offer money enough to induce good men and good horses to come to their race. Then you will get good horses and a better class of men to race them, and your sport will be clean and there is no question but what they will race for the money if the purse is large enough. There are a great many tracks that you go to the county and district fairs, where, when horses start to arrive, they will probably get a road grader and scrape the weeds off, leaving the race track all full of holes. That is a fine thing. And the stables at about four-fifths of the county and district fairs are not fit to put a horse in. As a general thing, horses in training have comfortable quarters, and when they go to the races they are stuck away in some shabby barn crowded full of stalls. Talk about don't get horses! I was at a place this year where they had them in a log house. They put a roof over my stable after I got there and I had to coax and beg them not to go away that evening because it looked like rain. You take a horse that has been trained, possibly for four or five months, and stick him away in a barn of that kind, no roof, the battens all off, and no windows, usually in that kind of a place there comes a big rain and it turns cold, and consequently the horse catches cold and he is not in condition to race. The management kicks, the horse has not shown up in his true way, the driver is cheating. There are a lot of things they say about men who train race horses. Then another thing, and a very important thing, is the judge's stand. Mr. McLaughlin just told you about some of those starting judges. We have any amount of those kind of fellows. Anybody can get a license from the American Trotting Association. He doesn't have to be a competent man to get a license to start horses. They usually pick out a prominent man around town where the district or county fair happens to be held, and they put him in the judge's stand to see whether you are complying with the rules or not. And I do not believe that there is one man out of fifty that are in the judge's stand at the county and district fairs who knows one tenth part of the rules. I doubt if very many of them have ever seen the inside of the rule book. Still you put them up there to tell the men who race horses what they should do. They can impose a fine, expel them, or do a great many other little things to them. That is a nice thing, too. Then, another thing that is the most disgusting thing, I think, that a training driver or owner has to contend with, and that is the payment of purses. I have been in places where you have got to chase around for a day to get that little old $120 that you earn if you happen to be lucky enough to earn it. I like to hear the starter say, when the race is concluded, "Come up, gentlemen, and get your money." That is what sounds good to me, and I think every other trainer or driver concurs in that statement. I think that Mt. Pleasant, Iowa, has the only real system of paying the purses that I know of. In fact, it is the only one I ever saw that just suited me. At Mt. Pleasant, if you win a dime down there it is "Come up and get your money, gentlemen." If you win a dollar down at that place, you get it immediately after the race, and, usually, with me, it comes very handy, because I need it. I think that if more associations would use that plan of paying their purses it would be more agreeable to the horsemen. They say they want to try and please the horsemen. I think Mr. Grady would furnish anyone with the envelope showing exactly how he does it. It is a large envelope with the name of the gentleman who owns the horse, and the name of the horse printed on the outside. There is a receipt at the bottom which he signs. When he comes up he tears off the end of the envelope, takes the money out, counts it, signs the receipt and returns it. Personally, while Mt. Pleasant does not give as large purses as some places, yet there is one thing sure, if you go there, you know you are going to get a horse race for the money that they advertise. If there was some other association that I did not know, or was not personally acquainted with, advertising the same amount of money, even though it was a little closer to me than Mr. Pleasant, I would certainly go to Mt. Pleasant because of the treatment that they have the reputation of giving the horsemen. And there are a number of places. Sioux City is a place that is well spoken of by the horsemen. You talk about your advertising. If you want to advertise your place and get good horses, let it get noised around among the horse fellows, the fellows that train horses, and race horses, and own horses, that there is a good place at Sioux City, Mt. Pleasant, Des Moines, or wherever it happens to be, and I guarantee you will have no trouble in filling your classes.

Now, in regard to the entrance fee, that is a question that has opened up a good deal of discussion. Personally, I am not in favor of the free entrance. I believe that three per cent is very liberal; that ought to satisfy any association. Some town where I raced this fall, for instance, down at Phoenix, Ariz., they took out five per cent. of the first horse that wins, not of the entire numbers, however. The next horse, the second one, they took out 4 per cent; the third horse, 2 per cent., and the fourth horse, there is nothing to it. Well, the fourth horse does not race for a lot of money. Take $1,000, $1,500, or $2,000 purse and you get a little money. They charge 5 per cent. entrance there of the entire purse. At Dallas, Texas, they took out on the same basis. At our state fair here they charge 3 per cent. and take out 5 per cent. I don't know which of the plans I really prefer, from a horseman's standpoint, but I think that the 3 per cent. is much the best and will get a larger field of horses and better horses.

Now, about this feed proposition. You take a man that comes to the fair with a stable of, say, eight or ten horses, and there is some feed store down town has the exclusive right to sell feed on that ground. Well, they will pop their price up about fifteen or twenty cents per bushel and charge an outlandish price for a bale of hay. Now, it is no more trouble to deliver that stuff out to the race track in large quantities than it is to deliver a bale of hay over to this end of town and a bushel of oats over in some other end of town at a much less price. I think those things should be recalled by the fair managements.

There are a number of other things that should be said, but since Mr. McLaughlin and Mr. Anderson are in this free-for-all kick, I leave them the rest of it.

Mr. Culbertson: Mr. President, I will say to the gentleman who just spoke that if he had circulated up around Jefferson, Green County, in the past few years, after the race had been finished, if he had been successful enough to win, he would have found his money hanging on a wire across the track in a silken pouch, with the name of the association, the date and the race, and he would not have even had to sign the receipt. His money would be found in there.

A Delegate: Mr. Chairman, I would like to say something in regard to this money business. Twelve or fourteen years ago he and I started in at West Union and we won several races there. When his race was through he was called under the wire and the money was dropped down to him. I suppose he has forgotten that. Waverly, West Union, Decorah, Nashua, and all up through there. Our money was always ready. One thing I would like for each man to take home with him, and that is the water. These big wells stand there all summer. They are full of water that is not fit to drink or use for anything. We shipped into Fonda one Saturday evening and they had a brand new pumping well there. A man from Missouri was one of the party and he drank some of that water. The next morning he said to me, "There is something wrong here, I am running off and my horse is running off at the bowels." Sunday evening there was a camp and I was pumping a bucket of water and a young lady came up to get a drink. I says, "help yourself." Then I happened to look into the bucket and I saw it was full of hair. We examined that well and there were some rabbits had gotten down there. Of course this would physic, and that is what caused the trouble.

I suggest that you pump every bit of water out of these wells and put in slack lime, because it will be sure to cause trouble if you do not do so.

And there is another thing. They have got some of the same stables that they had forty years ago, and the walls have big cracks in them and the horses have got to stand in a draft and sleep over night. One time at Waverly I had to put my horse in a stable there and it rained that night. I had just taken the horse out of a stable that stood three feet off the ground. The next morning he was standing ankle deep in water. The stable was in a low place and when it rained the water ran into it. The stall should be elevated high and dry.

Another thing I wish this body would carry to the legislature and that is the exorbitant prices charged for stallions. I asked one person, "Why do you charge more for a stallion?" He said, "Because he is a stallion." I said, "Well, then, why do you not charge more for a man than for a woman?" "I haven't time to argue that just now," he said, "but that is the law." Now, we would like to have that changed. Down east they don't charge a cent, and I think those things ought to be looked after.

The President: I just rise to ask a personal privilege. I suppose probably I will have to apologize for the Fonda well; but, connected with the statement that there was plenty of good water on the ground in many places, of course, looking at it as a matter of levity, we thought those fellows were accustomed to worse things than that.

Delegate from Marshalltown: Mr. President, so far as the Marshall County fair is concerned, I fully realize the benefit of the horse racing that we have at our fair, both as a source of entertainment and as a source of profit to us, and we are willing that the horses bring us a profit. Now, we have been discussing up there to some extent; that is, Mr. Bennett, superintendent of speed, and myself, the state races another year, and this thought came into my mind: The plan of allowing the owner to make two or three entries, name two or three horses on the first of May, when these dates closed. If he named three, give him the privilege of dropping out one of those on the first of June and drop out a second one on the first of July, paying 1 per cent. on the first, July 1st, and the other 2 per cent. at the time of starting his horses. Whether such a plan as that would be feasible or in conflict with the rules of the American Trotting Association—that is, for a man to name three horses, say, the first of May, pay 1 per cent., and the first of June he can drop out one of these and leave the other two in; the first of July he could drop out the other one—that, is take his choice, after two months' additional training, as to the horse he wanted to enter in that race. Whether it would be feasible and in accordance with the American Trotting Association.

Mr. Woods: Suppose that a man only had one horse, then he gives somebody three chances to his one. I do not approve of that plan at all; it is very bad.

A Delegate: That is what the Grand Circuit has been doing for the last two or three years by allowing these trainers to dominate. Their schedule was 3½ per cent. and each additional horse was 1 per cent. Result: The little fellow has been driven out by these fellows. This has not worked successfully at all.

Mr. Gelo: Mr. President and Gentlemen: I was not on the program, and I have a bad cold, but I have been listening here and I have had the pleasure of attending these meetings before now, and the impression is as I sit here and think about this, and, as I have been to your fairs and the race meetings, that there seems to be a disposition to get together. The whole trouble, if there is any trouble, is along the line of lack of proper understanding. I have often thought in my office when a secretary writes me and a horseman writes me, "here are two conflicting interests. The horseman writes this and the secretary writes this," and I think, "Well, now, those people ought to get together." Someone sitting here a while ago mentioned that he wants to find out about those things. The trouble is that most of the secretaries do not make it enough of their business of knowing about this. They do not give it enough attention, they are more or less indifferent about the needs of the racing end of it. They do not have a full understanding with the horsemen. Now, they all want to. The disposition is to have this understanding, and we are certainly improving. The associations seem to recognize what an important feature and factor these horsemen are with their stables and entertaining their crowds, and I am inclined to believe, myself, in saying that these fairs are more of an entertainment proposition than an educational proposition, and I almost agree with Mr. McLaughlin.—I believe he said it was a joke, this educational feature. Now, the trouble is that they are so indifferent, there are so many. You can not deal in generalities in this because there are a number of associations here in Iowa that I know are very exacting and careful. I do not want to name them here because we all know them. There are certain ones that the horsemen know, and that are known in association circles, and they are all right and modest. It would be all right for most everyone of these men to know where they are. They are indifferent about judges, as a rule, everywhere, and of course they don't want to spend any money on this proposition. They hire these starting judges for very little, because they have got the license, and, of course, that is unfair to the horsemen. They have big stables they run at little expense, and then the associations are careless about the men in the judge's stand. I go to many places where that thing is a joke,—a real joke. I have been so disgusted that I have walked away from the stand and sat down somewhere and tried to think it over. I would not hold any argument. They are indifferent about it. Those are the things that need attention. Think what those men have got before them in that judge's stand, and starting judges don't cost us very much, and they can find men for their judge's stand, and they wink at so many things, and, to tell the truth, the American Trotting Association upholds this in a way. That is one of the really weak points in the American Trotting Association. It does not help the association or the members really. What is needed is a fair and a square understanding. And these classes, you know they have a way of not notifying the owners and the drivers whether the classes have filled. They do not comply with that rule at all. The American Trotting Association really requires it. But I have tried myself, often where I was interested and was entitled to know whether the entrance had filled up at Fonda, and Marshalltown—I do not mean those towns, but I use them for instance—and gone to the expense of wiring the secretary because I wanted it for information. But they do not pay any attention to this. They could have a lot of notices printed on the typewriter. I have seen many a sick horse and many a horse put out of commission that they have not only trained one season, but sometimes two seasons, and the stalls are unfit. And it comes a rainy time and the stalls are damp and it rains into them, and it means putting the horse out of commission, and it is an expensive proposition. Now, it looks to me as though we are on the right track here. I am here to listen, and that is my business, to listen and hear what the other fellow has to say; but you are on the right track. Go on and have a fair and square understanding with these men.

Mr. Culbertson of Jefferson: In connection with what I said a while ago, in regard to my having no use for the American Trotting Horse Association, I simply recall an instance that happened last year in which we had some entries at Jefferson. A certain secretary went up to Carroll—they preceded our race—and bought up the horses. He gave them so much money, $140 in one case, and $150 in another, I think it was three or four horses to go to his town to put on some races. That is one reason why I have no use for the American Trotting Association. Until it is different from that I will continue to feel as I do now. I would like to hear from others here with reference to this matter.

Mr. Stephany: Mr. President, at that time Carroll did not belong to the American Trotting Association. I presume if they had the little trick that was pulled off on our brother secretary would not have happened.

Mr. Reeves: Men in the management of fairs are fair minded men and want to do what is right if they know what is right. It is only a matter of being informed what is right. I am glad that I have heard some of the things I have heard this afternoon, and am better informed on the matter of horse racing. I know some things I wanted to know but did not know how to find out. Now, one gentleman referred to the stable at our place, I think, some fourteen years ago. Now, you understand that five years ago we organized the present fair association and we have new stables located in good places. We have good wells so that the rabbits can not get in there. We have city water there from a well seven hundred feet deep used for drinking purposes all through the city. We are trying to take care of the horses right and treat the horsemen right. Now, I believe that, as a rule, fairs will do that if they are posted and realize that the men who drive horses are real human beings. Some people have an idea that they belong to a different race. I have run up against them pretty much and find them a pretty good set of fellows, and we will treat them right up there, and I am sure other fairs will do so.

Now, getting back to the discussion earlier in the afternoon, I want to say if our friend from Marshalltown will put on a stunt at the Marshalltown fair next year similar to the one he described, we will all go down, and he won't need another vaudeville.

Mr. McLaughlin: I think that this organization has made a step in the right direction in asking the horsemen to co-operate with them. I was here last year and I guess I said a lot of things and made a lot of kicks. I believe I am the champion kicker of Iowa in the horse business, but if my kick helped in any way to enable some fellow to get feed for less than double prices, or some drayman had hauled our traps to the fair ground for less than he would charge a townsman for hauling coal all day, I am glad of it. And I wouldn't blame any secretary if he got up this afternoon and defended himself. We have just growled and kicked. I wouldn't blame them if they got up and said, "McLaughlin and Wood, do you remember that time you brought that old horse down to our fair and just naturally stole the money?" I wouldn't blame them if they would go at it that way.

During the month of September there are eighty fairs in the State of Iowa, and the horses are scattered. It isn't an easy job to make a trotting horse or a pacing horse. You can't grow them like a big pumpkin. A man can breed one hundred mares—standard brood mares. Then, out of that one hundred brood mares, he can get approximately sixty colts. Of these sixty colts, one out of two, or thirty of them, are physically able to be trained. Say that thirty can be trained. Out of that thirty there are probably ten, or one-third of them, that will show exceptional speed to get to the races. Out of this ten that get to the races there would be probably one out of five, or, say, two of them that won over their expenses, or, in other words, two out of one hundred that make expenses from the time they are born. In other words, when you breed a mare you are taking a one to fifty shot. You talk about gambling! Good race horses are not easily made. They are not plentiful. You get counterfeits and imitations of them, but there is probably two out of one hundred mares bred that develop enough speed to make any money. It is an uphill proposition all the time. Now, say there are fifty-eight others. What are you going to do with them? Thirty are not trained, they are cripples. They are put to breeding. Under I. of the American Association these are the future breeders of the standard bred. Eight out of ten we take to the races. They didn't make good and we might catch suckers for them and make them think they are good. Now there is twenty. They used to sell good, but the automobile has put them out of business. So, you understand, the training business is not all roses. The only way to get horses is to encourage the local trainer and provide stables. I know secretaries in Iowa who knock the local trainer. Stimulate the breeder to raise them and get them in the trainer's hands. Then there will be enough horses to go around. There are not enough good horses now. In the month of September everything starts, and you can not get good races without good horses. As I say, the secretaries—I don't know what they think of the horsemen as a lot, but we holler and belch and beef. We think lots of you, at that. I don't think at the races proper you ever hear me kicking. The only kick I had coming this year was because some of the horses were faster than mine.

A Delegate: Being supervisor of speed at the Marshall County fair, I have had inquiries how to get more horses. The first conclusion we arrived at was that we would have to increase our purses. In order to increase our purses we found we would have to increase our money, so the fair board has very kindly agreed to enlarge the amphitheater. That will give us a larger gate receipt for the horse proposition. Now, the second conclusion that we arrived at was that everything now is based on co-operation, everything—speed or county fairs. Each county fair is pulling and hauling and going its own individual way. It looks to us as though if the county and district fairs would join in a circle, say five, we could give a uniform set of purses that would last for five weeks. The horseman then would know just exactly what he was going to do. He could go through the circuit and there would be five weeks of racing for a uniform purse, and the secretaries could also see that the accommodations and the barns were fixed. They must get together. Mr. Gelo, I think, struck the key note when he said that was the only salvation. And I believe that this is going to result in a lot of good, both to the horsemen and to the secretaries.

Hon. C. E. Cameron: I have been very highly entertained this afternoon. There are two things you have to take into consideration. You have got to look at both sides. You have to take the association and you have got to take the horsemen. Now, I will have to disagree with my friend McLaughlin when he says that our fairs are all amusement propositions, for this reason: If we expect to perpetuate our county fairs we must do it along educational lines, because some day we are liable to run out of the amusement end to a certain extent, and then we are left. I will be frank with you in saying this: You know of a very few fairs which are successful that have no amusement features or racing, and you find but very few races in Iowa that are successful that do not have a fair in connection with them. Now, those two go hand in hand, and there is where the success comes in. Now, I think that the horsemen have justly presented their case this afternoon, in regard to some of the kicks that they have made. I do not think this is altogether the fault of the secretaries of our different fairs. I think the fault is largely due to the fact that they are not acquainted with the conditions, and do not know them exactly what the horsemen want or what would please them. We all know, members who have been connected with fairs past, that we must have amusement features. We can not have a successful fair without the amusement side of it. I am a little different from some of our secretaries. I have never been in favor of having the amusement feature in the morning. We invite our exhibitors, our cattle men, hog men, grain men, to make their exhibits in the different departments, and we should not turn around and put on a ball game or some other amusement on the other side of the fair ground and draw them away. Now, I think we ought to have the happy medium in that proposition, the forenoon for the educational features, and the afternoon largely for the amusement side of it. Just the same as we gentlemen do over in the Iowa State fair. You see no amusement feature in the Iowa State fair in the morning. That is carried on from an educational standpoint. I think our county fairs ought to be along the same lines. There never was a time in the history of this country when the farmers, the people who make up the patrons of our county fairs, should be encouraged to bring the products of their farms to the county fairs and show what our communities produce. Those people are just as much interested in what they produce, whether a hog or a steer or a sheep, as the man who brings his horse to the fair. And we should encourage those things. That amusement feature we have got to have. My long experience in fair work has taught me you must have that amusement feature; but that amusement feature must be quite largely according to your gate receipts, and what you can afford to put up for an amusement feature. In this county work some fairs can go to work and put up $400.00, and some $300.00, and some $500.00. Another locality will support a $500.00 proposition and make it pay. But you must be sure to have a balance on your books at the end or there is nothing succeeds, and you might have the fair come out a thousand dollars in the hole. That throws a damper on it. But let the secretary make the report that there is $1,500.00 balance on the fair books at the end, and everybody wants to get in and boost for the fair.

Now, in regard to the entry features. I will agree with a great many gentlemen here that you are probably asking a little bit too much of horsemen to furnish all that amusement and charge them 5 per cent. Five per cent taken from their receipts, as a gentleman has quoted here, a man who has come to the races and has come in fourth has had the pleasure of racing his horse for nothing. And he gets nothing for it. I think the happy medium in this proposition would be, if it is possible to do so, to bring the entrance fee down about 3 per cent, and 5 per cent for money winners. I believe that is coming, for the reason that it is an entertainment feature. Now, as a demonstration of that kind to show how it is interesting to you, take it over to the Iowa State Fair. You take it when we have the program ready to pull off there, last year we had seventeen thousand persons in front of that grandstand. I do not care if we put out five thousand dollars, it is worth it for the entertainment. That afternoon we can not get a corporal's guard in that grandstand and we do not try. If these people did not want this thing they would not go there seventeen thousand strong and pay for that afternoon.

As Mr. Culbertson says, you can have your automobile races and motorcycle races, but I tell you, gentlemen, the people like to see those things race that breathe the same air that you breathe, and you ought to give these horsemen consideration. I thank you.

Delegate from Marshalltown: I would like to know how many fairs there are represented here today that have a grandstand of sufficient capacity to accommodate the horse races. If any of you have enough room in your grandstand to accommodate these crowds that want to get in there to see the races, I wish you would put up your hands. I see one hand raised. Right there is a point, gentlemen, where I believe the fair associations are standing in their own light. I never went to a fair on a good day but what I was obliged to get up from a seat that was kindly tendered to me by the secretary of that fair in the grandstand, to give to some lady. Up in Marshalltown we put one hundred feet onto the grandstand some two or four years ago, and we have two hundred sixty feet now. It will seat probably 2,150 people. On the last day of the fair over there this year we sold 3,300 tickets for that grandstand, at twenty-five cents. The result is that you are going to increase the capacity of the grandstand. When we increased that the receipts each following year paid us 60 per cent. on the investment. I believe the lack of money to pay adequate purses lies in the fact that with the fair's dividends you do not provide an adequate place for people to go and sit. Build your grandstands to accommodate the people that want to go in there, get your money out of the people and give it to the horsemen, and you have solved the whole question.

A Delegate: The question of breeding racers was brought up a little while ago, and, as stated by the gentleman from Marshalltown, I think some horsemen thought they were not right. Points like that are what I want to get. Now, the question is, what kind of an early closing event can we have that would be all right? Now, in talking with some of them down in the lobby this morning, among others Mr. McLaughlin, he rather suggested an early closing event without naming the horses, and I would like to ask him when that horse should be named. How late?—say your early closing event closed the middle of May for one person, 1 per cent. due the first time, then 1 per cent. at the regular time of closing, when should that entry be made?

Mr. McLaughlin: I think at the time you name the closing. All the stuff would be live stuff, eligible the first of May.

A Delegate: One of the things I want is a fair list of entries. The next thing is something for the grandstand to see, and that is what I want to get at. Another thing, the horsemen talk to us about larger purses. Now, isn't it a fact, if you have a good horse you want larger purses? If your horses are not very good you do not want such large purses. The fellow with a string of horses that are not very good, a $300.00 purse is good enough for him.

Mr. McLaughlin: You should encourage the local racers to keep in the game.

The President: Gentlemen, it is getting late. We certainly appreciate your attendance and your continued attention here, and the program was very interesting.

If there is no objection we will stand adjourned until 6:30 p. m., when we will assemble for the banquet.

BANQUET, 6:30 P. M.

Program opened with a vocal solo by Dr. Gibson.

The President: Gentlemen, most of you are aware that this afternoon a few self-styled gentlemen,—fine fellows,—hurried to assure us that they, and they alone, furnished the entertainment for the fair goers of Iowa. They ignored the fair secretaries and assured us that to them belonged the credit of entertaining more than a million people in this state. They had their innings this afternoon—good looking fellows, most of them—but the fair secretaries and the fair officials, I judge, will have their innings this evening. In Chicago last week I heard some of the professors or statisticians say that over thirty millions of the American people took in the fairs of the United States. I calculate that in the

State of Iowa more than a million attended the county and district fairs, the interstate and the state fairs.

Now, to direct the thought of this great army to march in step with the progress of our times, these gentlemen, representatives of the fairs of Iowa, ask the co-operation and the thought of our best people, and the assistance of the best citizenship of our state, and with us this evening is a man of this type; he stands for the better life, the higher citizenship, and, if you please, fearlessly, regardless of consequences, for the things that in the future will measure the greatness of this commonwealth. It gives me great pleasure to introduce to you this evening Governor Clarke of Iowa. (Applause.)

GOVERNOR CLARKE'S ADDRESS.

Getlemen, I do not know of anything that I ever did, or any experience that I ever had in life that would fit me to speak upon an occasion like this. Perhaps very much that I may say tonight will be said by some lawyer to be incompetent, irrelevant and immaterial to this occasion. If that is so, when I am done you can move to strike it from the record and let it go at that.

I suppose that the fundamental thing with reference to our county, district, and State fairs, is the betterment of the agricultural and animal industries of the State. In other words, for the purpose of bettering the condition of people in every possible way. Because a county fair or a state fair does, in its length and breadth, and in its fullness, take into consideration everything that would tend to elevate and make life better, every feature that would appeal to our life. The fundamental purpose of it all is the betterment of human conditions. That is what everything should be for. The state, as I understand it, contributes, under certain circumstances, to the fair associations. The state would make no contribution to anything except for the benefit of all of the people. It could not possibly have any other purpose in an appropriation except for the benefit of all of the people.

I want to suggest here that there is a general feeling over the country that there is something wrong with rural conditions. We hear a great deal of talk about "Back to the Farm" and all that kind of thing. I can not see that there is anything particularly wrong with rural conditions in the State of Iowa. When I look over this state, and as I go about the state, I am forced to the conclusion that rural conditions never were better in the history of mankind than they are in Iowa this very night. (Applause) Never was there more comfort in the homes, never were the homes so good as they are tonight, never was there such prosperity in this or any other state, or in any country under the sun than there is tonight in the rural conditions of the people of the State of Iowa. So that it seems to me when we begin to talk about "Back to the Farm" and about there being something wrong in rural conditions in

Iowa we are mistaken to some extent. Personally I do not think there is so much in that as we are in the habit of making out. Every man of you looking back to the time of his boyhood, and over the years that intervene between that time and this hour is ready to say that all the way through the years, there has been a betterment of conditions in the country in Iowa. This year is better than last year, and last year was better than the year before that, and the last ten years were better than the ten years before. So that I think we must say that rural conditions in Iowa are pretty good now. There are some things that might be better. Perhaps I may speak of them further on if I do not forget it.

Now getting up to what I want to say let us ask this question: What has made this prosperous condition in Iowa and in this county possible? I think it is simply transportation. I do not think it is anything else. Without it we should be absolutely back where we were a hundred years ago in a little while. It is transportation that has made the civilization we enjoy. You who live on the farms, you who are interested in agricultural conditions, you who are interested in managing these affairs will remember that before we had transportation in Iowa there could be no prosperity on the farm. It was absolutely impossible. What purpose was there, what interest to a man who had a farm, for raising anything more, or producing anything more than would take care of his family and the animals he had on the farm. There was no market for him, he could not reach a market anywhere with his surplus from the farm. There was nothing to inspire in him any desire for a surplus at all. But when transportation came, and when we reached the money-making age, (that is just when we reached it for we would not be a money-making people if it were not for transportation). The money-making age was reached when we reached the means of transportation which we have in this country. Then began to spring up the factories in the cities, then men began to go to the cities, then the cities began to grow and develop, and then began prosperity on the farm, and it did not begin until that time.

In place of being a bad thing for the farm it is one of the best things that ever happened in this country, that men did go to the factories, that they did go to the cities, that they did leave the farms and create a market for the surplus of the farms in Iowa, and all the other States in the Mississippi Valley. It was a fine thing that they did that, built these factories, made this market and made this constant demand on the farms for the products of the farm. You talk about "Back to the Farm." Why if you put a hundred thousand people in Iowa back to the farm tonight it would be an injury to the farm and to the farmer, because it would have a tendency to destroy this market that has been created and is furnishing these hundreds of thousands of people, that he is feeding. And everyone back to the farm takes away from the demand for his products. It would have a tendency to reduce the price of the things produced on the farm, as it seems to me.

The implements that have been placed on the farms and that have been invented in the last thirty-five or forty years have multiplied over and over the ability of one man to accomplish on the farm. So that one man will do practically as much work as two or three did in the time that we were boys on the farm. I do not want to disparage this cry of "Back to the Farm," but I just want to call your attention to the fact that when we get down to the bottom of it and think about it, we do not have such a bad condition after all. It has created this demand and these prices that we have. The greater number of men you have to feed, the greater is the demand, and greater will the price be for the products. That is what raises the price of land in Iowa and other states of this Union. This is what has occurred to me when I have thought of this matter of transportation,—that it has made the farm.

Another thing that lies at the very foundation of our prosperity, what we must have, is fundamental, is more production. More production all the time must be the demand, and it is the thing that men must set themselves for in this country. If it is true, as James J. Hill, the great empire builder of the Northwest, has said, that we are to have in this country within fifty years two hundred millions of people, then it is true that we must increase the supply to meet this great demand that is coming. That is one of the things that I conceive the county fair, the district fair and the State fair is for, to teach people, these fundamental facts that lie at the very foundation of their prosperity and their life as a people. It is the end and the very purpose, I think, of the fairs—when you get right down to what they ought to be—develop that thought and that spirit and that necessity among the people—more production all of the time. It would be, of course, necessary to promote every interest that would bring greater results and greater efficiency. We talk about efficiency in all lines of life, and it is absolutely essential that we do become more efficient, and the county fair and the district fair ought to teach the people, in what they do and what is exhibited there, the necessity for efficiency, and teach efficiency itself, or they do not perform their real purpose among the people. Now it seems to me that that would be true, and they ought to teach better conditions on the farm. The conditions tonight, I say, are better than they ever were before on any other night that ever came upon us, but still there is always room for improvement everywhere, and the fairs, in my judgment, ought to tend, in their purposes, to better conditions on the farm. Of what value is it if I go to a county fair, for instance, and see the results that are there, pass through it in a desultory sort of way, and look at the stock and everything that is on exhibition there? The thing that ought to come to the people is this question: How did you obtain these results? How did you produce what you exhibit here? How did you bring that about? Unless that thing is brought to the people, unless that lesson is gotten out of what is there by the people, then it seems to me that fairs fail in what they ought to be. Of what value is it that I go there and simply see a fine jar of fruit? There it is, beautiful, rich, inviting, and everybody stops before it, but where is the person who put up that jar of fruit? She ought to be there to tell those who are interested just how that was done, otherwise I pass by and it does me no good. It does no good at all. So I feel that so far as every feature, every department of the fair is concerned, it ought to be so managed, that there be an expert there in every department of the fair to tell and instruct the people exactly how these things are brought about, so that there may be results forthcoming of actual benefit to the people who attend.

These things have always appealed in that way to me when I have gone to fairs. How many questions arise when you are there? There is the question of soil, and of preparation. There is a fellow who shows some corn. He has a dozen of the best ears of corn, and he gets a premium for them. That does not indicate at all that he has an acre that is any better than any other person's acre. He goes out in his field and selects from parts of it where there were unusually favorable conditions, some unusually perfect ears of corn, but he may not have a ten acre piece that would size up at all with these samples. The question with the man who goes there and looks at it is, if he has produced a ten or a forty acre field of corn like that, how did he do it, and an expert, it seems to me, ought to be there to tell the people exactly how to prepare the seed bed, how to select the seed, how to cultivate, how to till, how to produce a hundred acres of corn like those sample ears that he has selected from a forty acre field that perhaps would not make more than thirty-five or forty bushels to the acre. But what we want to do is to urge and teach the people how to make the whole field like that, how to conserve the moisture, and all that kind of thing. What is a county fair for? What is the State paying out its money as it does for, if it is not to bring to the people just that kind of information? It isn't anything particularly for me to see those things, but the thing for me is to know how to do it, how to bring that thing about, and then the county fair is of actual value to the people, and it is worth the money that they put into it. That would require experts to be there. It would pay to have them there. It would pay, I think, and bring large dividends to the people if, whenever they look upon any exhibit at all, there was somebody there (perhaps there is. I don't know exactly how fairs are run) to explain to them exactly how this perfection of the thing that is on exhibition, was brought about. There is the question of crop tillage, of drainage, and all that kind of thing. I think there ought to be a model farm house at the county fair. I think there ought to be a model farm there in miniature, and the model farm house in miniature. Are we going to get on in Iowa? Are we going to succeed on the farms in this State beyond the success of other peoples, if possible? Then we must bring our young men and young women to these institutions, show them the perfect thing as nearly as we can produce the perfect thing. Show them the difference between perfection and imperfection. Show them the possibilities of the farm, show them the possibilities of stock growing. Show them the possibilities of what may be done in the house on the farm, and let them contrast it with what is done and what is being accomplished, and let them see the wide difference between the possibilities and that which is actually transpiring upon the farms of the State. These are the things that it seems to me would tend to make these county fairs much more valuable. I saw over there in the Capitol today an exhibition of apples. I do not believe that exhibition can be beaten. You go to the county fairs and you see exhibitions of that kind. Well—somebody has given special attention to that on his farm, in his orchard. It can be done on every man's farm, and in every man's orchard, but the fellow that comes along there and sees that wonderful, that beautiful display, wants to know how it was brought about. How did you spray your trees, and how often? And what did you do it with? If there is somebody there to tell him about how to care for the trees, and all that kind of thing, if a little attention and time is given we may have just as much fruit in Iowa, and fruit as fine or finer than is produced anywhere in the west, or the Rocky Mountain States. But there isn't anybody there. We pass by that beautiful display of fruit. How that man was able to produce it, we don't know. We would find it is easier than we thought if we were to ask about it, or if there were an expert on fruit culture there to tell us about it.

Then there are sanitary conditions. We talk about the conditions on the farm; that is, they are not as they ought to be. They are not up to perfection. There ought to be opportunities for teaching at these fairs with reference to sanitary conditions, and modes of life. How about the water supply on the farm, how about ventilation, how about disinfecting rooms and buildings and stables and all that kind of thing. We talk about these things as being something that would be very fine to know and that we ought to be able to do, and it is simple and easy, and there is no place better equipped than the county fair, the district fair or the State fair, to teach and instruct the people along these lines. It ought to be a veritable school of living and managing in the country, of farms and of home life.

At the fairs you may get down to the good roads problem, and you may get to the school problem. We had a lot of school teachers here in the city a month or two ago, and one of those who has given as much attention, probably, as any other man in the State of Iowa to educational matters, one of the professors down here at Grinnell, said that the country school conditions in Iowa were not any better than they were fifty years ago; that they were in exactly the same condition that they were fifty or sixty years ago, and that not a single step of advancement had been made in all that time. We have made advancement in every other direction, we have thought and studied so as to advance in every other department of life, and wonder why it is, if that is true, that we have forgotten our schools. It seems to me that at the county fair, if it does all it should do, it ought to take up that question also. It does to some extent. It gives an exhibition of what the children have done in the way of drawing maps and writing, and all that kind of thing, which is all right and good in its way, but they ought to go further and teach what these schools ought to be. The ideal school in Iowa ought to be presented. We have in this state a law that permits consolidation of schools in the country. I think that the time is coming when it will be seen and felt in this State that this is one of the necessities of our rural life in the way of advancing it as fast as possible. Let our country schools be consolidated. There is nothing compulsory about it at all upon any school district or in any part of the State, and perhaps ought not to be. It ought to be left with the people. The time is coming, when the results of some of these consolidated schools are seen, what they do for the people, how they better conditions, and how they make better schools, that other communities will see their advantages, and there will finally be a very rapid movement for consolidated schools all over the State. That time is coming. I think there is no question about that.

In these fairs I think there is a fine opportunity to see and to teach what the community center in a rural community would be, and what its value and its worth would be. There is more in organization than in any other one thing that I can think of. When there is team work, when men pull together with reference to any proposition, if it is your county fair and you are all interested in it and you all pull together, you have a fine county fair. So it is with anything else; but if you are disorganized, if there is no team work, if there is no leadership, then there will be no success in the county fair, or in the schools, or with anything else. And when the time comes that we have developed in rural communities men who will take hold of these public questions, these problems, and will lead in these communities, then we shall have what you call a social center in them. Then you will have men meeting for the purpose of discussing human welfare, the welfare of the rural conditions in which they live, and the betterment will come on rapidly, and so it may through the county fair. I think that a movement like that could be inaugurated, and the illustration of good roads, for instance, in our county fairs, would be a fine thing. We are coming to such a time, there isn't any question about it at all, because it is the course of civilization, it is simply because that in the progress of humanity there can, in the end, be no help for it. These things will come as men move on and live on, and think about conditions. These things are bound to come some way, somehow, some time, as they have come in other countries. But if we could get in our public gatherings, county fairs and district fairs, lectures and talks upon these questions, we would bring about that day earlier than we will under present conditions. When men begin to see that a good road will enhance the value of the farms from ten to fifteen dollars per acre; when the Lincoln highway is thrown across this continent, entering this state at Clinton, going through the rich portion of the State of Iowa, and landing down yonder on the Missouri River, and men see that the lands on both sides of that great transcontinental highway through Iowa have increased in value fifteen to twenty-five dollars per acre, meaning millions of dollars along that highway, then the people of Iowa will begin to see what the value of a good road is. It will do that thing just as inevitably as that the sun will rise and set tomorrow. We need simply some object lessons like that. Then men will begin to take hold and see and develop along that line, and if our fairs would take up the question of good roads, if they would study it, if they would give examples of them, as is done at the Iowa State fair, these object lessons would make these county fairs of great and inestimable value. So that I say that the fundamental idea is, of course, for the benefit and welfare of all the people.

That is what government is for, gentlemen. It cannot be for anything else and be any right sort of government. It was the great English philosopher Locke who said that government is for the good of mankind, and Spencer said that no man had ever given a definition of government that was equal to that. When you come to look at government as a thing that is for the good of mankind, and if it exists for that alone, then all of our laws, then all that we do in a public capacity as we do in these fairs, will be directed to the good of mankind, to the good of the community in which the fair is held, to the benefit of that community, to make rural life better, to make crops better, schools better, roads better, everything that goes into the life of great people better by the exhibitions that are given.

Now this is something of my conception of what a county fair should be and do. I have never managed one. I might not be able to bring that about at all, but we have our ideals, you have your ideals about what a thing ought to be, and we are struggling toward our ideals, always struggling in that direction. How fine a thing it is when men have ideals that simply blaze and burn in the interest of humanity and will press on toward them, never faltering, but moving in everything that they do, in every organization that is public in its nature for the public good. So that I say it seems to me that that ought to be the ideal that enters into the purpose of a fair. That is the purpose of our great State fair I am sure. No other State in the Union begins to equal it or can be compared with it. It is a great educational force for the people of the State of Iowa, and that is what it should be. It should educate them along all of these lines that I have suggested, and the county fair, in a smaller way perhaps, should do the same thing. That should be its aim, its end, and its ever constant purpose. So, it strikes me, that is what you ought to aspire to in our county fairs. I think that we ought to teach through these things what the most successful life is and how to reach it.

If it is a fact that our rural schools have made no progress for fifty years, isn't it a sad commentary upon us that we have given more attention to the material, and thought more of it, than we have thought of the intellectual? Gentlemen, you never can get anything into the state permanently of good, concrete, sound value until you have put it into your schools. It must get there eventually if you want it in your State finally. It must be in the schools, and no State can ever rise very much higher or go very far beyond its schools, beyond its educational facilities. I mean by that, that it is not wealth alone that makes a State. You may acquire great material wealth and you may so conduct your civilization and your wealth as a people that you may grow boundlessly rich, but unless your people are strong intellectually you can not be a great State or a great people. We must look to our schools for the future men and women of this State, and for the future greatness of the State. We must do that because you can not rise above your schools. Dollars do not raise men and keep them up. They may go up a while so far as prosperity is concerned, but if the foundation of our citizenship is not built upon intellect, and upon intellectual and moral worth, finally our civilization will topple over. So I say that what you do in a public way in our county fairs, in our public organization, you ought to do with that thought. I call the attention of you who manage these fairs to this in order that, if you think there is anything in what I have suggested, you may introduce at your fairs these things that it seems to me go to make a great life and a great people. After all, the life that satisfies the most wants, morally, intellectually and materially, is the greatest life and makes the greatest people. In other words, if our viewpoint in this country has been the view point of the material alone, our county fairs, or any public organization ought to change the viewpoint of our people. When you get them together at fairs in great crowds, there ought to be something there that would lead to an appreciation of a higher life, an educated life, those things which are finest and best in life.

Why do people go to the city? Why do we say that they run away from the farm? What is there here in the city that attracts them? Is it the finer things of life? Is it the show of the city? Is it the hurry and rush and the noise of the city that brings them here? Well—perhaps these things have something to do with it. Perhaps they see finer opportunities for making money here than on the farm. But there is where they are mistaken. In this day and age of the world there is not so much in the city for the masses, but it is on the farm that the great opportunities of life today are found for the great mass of the people of this country. A man who could not make money on a farm in Iowa during the last ten years could not make money anywhere. Every advantage—prices and everything have been to his advantage, so that I think that the fair should have something of the definite purpose and aim in view, to impress that fact and it should be loyal to this purpose. To that end there ought to be leadership. There ought to be an organization among the people to that end, and the fair should develop this leadership. It should lead to co-operation in the counties, economic and social as well. The social life of the county could be improved very greatly in this way. The economic conditions ought to be discussed in the country as well as in the town. And here is a thing I want to suggest that occurs to me just now: You have your commercial clubs in your county seats and in your cities. I think the farmers ought to belong to the commercial club because the interests of the men in the country around the town are exactly the interests of the men in the town. Their interests are mutual. Then they should be mutually helpful to each other. If a town can develop into a beautiful town, beautiful homes, well kept homes, parks and beautiful streets, the land surrounding is increasing in value on account of it, and if the country home can be beautifully kept, good sanitary conditions, well ventilated, good water supply, well painted buildings, well kept farm, that farm is rising in value and so is the property in the town. When the commercial club meets in the town it ought to have men from the country to discuss questions mutually with a profit to both interests. My interest is yours and your interest is mine, and our interests are all bound up together, and when you go into the county fair it ought to be both of the country and the town. These are the serious purposes of the fair.

I recognize the necessity for amusement. I know that, of course, must be a feature. We all recognize that. I believe in the merry-go-round, I believe in the race, I believe in good clean shows, and we ought to have them, and athletic sports, and all that kind of thing. They are all right, but they ought to have their hours at a fair. The merry-go-round ought to be silent when there is some expert telling about how to raise corn, or how to prepare the ground, or how to do this thing, that thing, and the other thing, that the attention of the people may be upon that, and so that there would not be utter confusion all the time. The State appropriates its money to that end, and everything, as I said, and as I again say in closing should be for the common good. That is what it is all for.

There never can be a great population here or anywhere else without a great production. These county fairs ought to look to that end. This country, this life, will be a failure when the population increases to two millions unless production increases in the same ratio. There simply can not be a great population anywhere without great production, and we will have to double it over and over in Iowa in the next century. We ought to begin now, and we ought to begin to teach it. There can be no happy or contented people without abundance. It is abundance that makes people happy, that makes them contented, and the abundance must come out of the soil of Iowa as our population increases if we are to have a happy and contented people. There can be no strong, vigorous people without healthful conditions. That is absolutely impossible. Now if these things are all true, if as I say there can be no great population without great production, what should the county fair do looking to that end? If there can not be a happy and contented people without abundance, why should not the fair, when it exhibits of its abundance, teach how to create a greater abundance that there may in the future be a happy and contented people here? And if there can not be a great people, that is not a strong and vigorous people, why not teach them in the county fair and everywhere else the conditions of health and what makes a healthful people. If we are to become great in these things, then I say they ought to command the attention of the people in just such gatherings as our county fairs. Then, after we have all of these things, there must be good schools at the foundation,—at the foundation or it will all fall down. So then, I think that in these gatherings there ought to be the model school, there ought to be an example showing the people what can be done, saving the waste in a township of nine schools as we waste the money now, having nine teachers and nine buildings and nine expenses where one building would do, and where three or four teachers would take the place of the nine. We will come to see this by and by, and we will reach it by and by. We ought to agitate this question through the fairs by exhibitions given there. I would not favor a compulsory method at all. You can not drive people into doing things. Do the thing and let the man next to you see what the advantages are in doing it that way and he will do it. In Spencer county, to illustrate, where the first consolidated school was proposed, I went up there to make an address, or try to, when they had the graduating exercises. All the people were there, and I talked with some who opposed the consolidation. They said they fought it as hard as they could, but they said that now not a man would undertake to go back to the old conditions, they would fight to the death a proposition to return. They had seen the advantages and were reaping the benefits from it, and Spencer county now has more consolidated schools than any other county in the state of Iowa, simply by that illustration. So we will come to these things in that sort of way—by beginning with a concrete example. Our roads are coming that way, and there will be no need for compulsion. Let the Lincoln highway show, as it will by and by, the increase of lands and all that sort of thing, and the rest will follow. Transportation makes a country, transportation will increase the value of lands, transportation will bring more money for your farm products because more easily and quickly marketed. But I have said enough, and perhaps talked longer than I ought to have done. I thought it would be well, however, if I could, to impress here upon this representative gathering of the people of the State the things that do make a people great, and the things that they ought to consider, that they ought to study in the interest of human welfare. I hope you men who manage the fairs can find some way to introduce into them some of these features. Can you not bring men who are experts along these lines to talk to the people in connection with the exhibition given, and show them, not simply the exhibition, but how it was accomplished, and the benefit that there is in it. I thank you gentlemen for your attention. (Prolonged Applause.)

The President: I understand that Colonel Kraschel is not present with us this evening. Mr. Cullison has kindly consented to take his place on the program, and it gives me great pleasure to introduce to you Hon. G. W. Cullison of Harlan, who will address you.

MR. CULLISON'S ADDRESS.

Mr. Toastmaster and Gentlemen of This Association:

I ought to apologize to you for being here, and I shall tell you just how it happened. I was not at home yesterday, I was at Avoca attending court. I got a telephone call from Colonel Kraschel, who lives in my town, Harlan, and lives only just a few rods from me, and I think a great deal of him, he is a most admirable man, but the telephone did not work very well, and I understood him to say to me, "Mr. Cullison, I understand you are going to Des Moines tomorrow to attend the supreme court." I said, "I am." He said, "I want you to do me a favor." I said, "I will be glad to do so, Colonel" and he then tried to tell me through the 'phone and I could not quite understand, it worked so poorly, but he said to me that Mr. Pickard would be down and explain. Well—I thought I was going down here to do some errand or kindness for Colonel Kraschel. Mr. Pickard got me this morning down in the lobby of the Savery, took me off into a corner and whispered to me that he wanted me to make Colonel Kraschel's speech. That is the way I came to be here, and I know you will be disappointed because I am not nearly so nice a man as Colonel Kraschel. He is a great deal younger than myself and knows more about it. Moreover I never could make a speech like an auctioneer anyhow. But I was so delighted with what Governor Clarke said that it was worth all my time coming here and listening to it. I like to hear these addresses, my fellow citizens, that reach right down into the heart and soul of men. The greatest product of earth, the greatest product that ever will be on earth is man himself; and the greatest failure that will ever be on earth, if it comes, and God forbid that it should ever come, will be a failure of the United States of America to produce great men. You want to keep in mind always and constantly the fact that we live under a government that is peculiarly our own, that everything from one end of the country to the other is governed by the people, and they are going to govern it more than they have heretofore. And when you think what a task that means for the people to undertake—to give attention to policies and the direction and the purposes of the great national government, and of every state government, and of every municipality, and of every county, and then his own private affairs and certain governmental functions that are about him, like schools and things of that kind, it requires great men to maintain a great country like this. And if it should come to pass, which in all probability it will within the next half century, that we will have two hundred million people within the present boundaries of our country, then the government must be still greater, still better and still more nearly perfect. I wish you would understand too that the whole purpose of all free government—the whole purpose of every civic institution, is or should be the making of men. It is not worth anything if it does not do that. And we are learning something in this country pretty rapidly and I am glad that men like Governor Clarke are pounding it into our hard heads, and that is that a government has got to have some other function in addition to merely being a policeman; that it has got to help in the development of its people everywhere. You want to bear in mind also, my friends, that you ought to be, and we must be learners all our lives. It is right to be learners in school, it is proper there, but there ought never, and there must never come a time in your history that you are not learning and seeking to learn, that which helps you, and not only you but everybody else. We want to learn another thing, and that is, if we expect to make any really great progress in this country we must elevate all the people. It is not worth while for us to think that we can build up, by our profession or our calling, ourselves, and forget those in any other calling or profession or any other business. We can not do that because when we begin to do that, the fact that they are dropping will bring us down also. In other words, it is the intention, I think, of the great "I Am" that when humanity develops along proper lines it will lift the whole race, and all its institutions ought to be directed toward that end.

Now, what is a county fair? Its possibilities are great—tremendously great. You want to bear in mind that we are a social people. Hardly a man, if he were living, and we would doubt his sanity, would be willing to withdraw himself from his social life and separate himself and live in solitude. It is against his nature. God never made him so. He made him to live with his fellows and it is one of the greatest forces of our lives, our social nature. We want it, we want to be with our fellows. We are gregarious to a great degree, and in the young folks it is stronger yet even than with us, and when you find young people isolated in life, especially when they begin to grow into manhood or womanhood, if you could get within their hearts and feel every throb that comes, you would find a great force that pulls them away from that condition. And if you asked me to explain why it is that the young people have left the farms and gone to the cities and towns, I would explain it by the fact as much as any other, that because of that social impulse that was not satisfied upon the farm, being so isolated, hence they fly away. These conditions ought to be changed, must be changed. I am with Governor Clarke when he says that the farmers are better off today, they are more intelligent, they have more to do, and understand how to do it better, producing greater wealth, growing in every particular, than they did in former years when he and I were boys down in Davis county. I agree with that proposition. But I want to tell you, my friends, these social conditions ought to be changed as much as possible anyhow, they ought to be brought to them or near them so that they will be satisfied. Farm labor within itself as mere labor is not so terrifically hard. I don't believe it is as hard as practicing law, gentlemen. But that is not the point. It is the eternal grind. That is what cuts his life. It is not merely following the plow a few weeks in the spring, or a few months, pitching hay or anything of that kind. That is not so particularly hard, but it is that eternal grind continuing out there month in and month out, and year in and year out, as my nephews told me when I was down in Oklahoma. They are bright young fellows. They went from this state down there and started their farms, and I went down to see them and they were doing splendidly. I said, "Boys, you seem to be doing well." They said, "Well, uncle, we are doing well enough making money." I said, "You have your schools started?" "Yes." "Don't you have any churches?" They answered, "Oh, yes; they send us an old guy out here to preach to us once in a while." "Don't you have any other social life?" "Not much, uncle," one of the boys said. "I am going to get out just as soon as I get a little money. It is a grind, and I am not going to stand it." And they are both gone away. I just showed that as an illustration. At the same time these conditions could be overcome, and we ought to overcome them in Iowa. We can overcome them in Iowa, and how? By increasing the efficiency and the power of all that class of institutions that the people love. May I speak here, to a man who does not belong to a church, if he thought that there ought to be and must be, throughout the entire county, places where men may go and preach and sing and pray, and teach others to preach and sing and pray, is that an important feature? Do we have it in the rural communities? Very, very few. Why, when these gentlemen sang of the little church in the dale it carried me back to forty years ago. Really, I felt more like going to tears than to cheers when they sang about the little brown church in the dale. But it is not there now, at least I don't know where it is. Shall these things be looked at? Surely,

surely, they must be looked at. If they are not in some manner revived, if some spirit does not arouse our people in that direction, I want to say to you that the outlook is not good from my viewpoint, and I am not pessimistic, either, governor. They tell me that I am a very optimistic gentleman up in my section. I am optimistic, but as God lives, and you and I live, it was meant and intended that there should be in some way, or in somehow such a relation set up as could lead, and leads, to the better and to the higher life.

Now there is another problem. I do not know how to reach it. When our people came and began to settle this country from the Atlantic to the Pacific they put in their constitutions everywhere, at least every one I ever read, that the state or the nation shall make no laws respecting the establishment of a religion. And I don't know how to get at it without you and I go to preaching. I cannot tell how to get at it, but it has got to come.

Now when you get down to the county fair, the governor expressed my ideas very well. But if I had my way about it, gentlemen, I would have every county in the state owning its county fair. Is that too radical? Buying the ground and improving it, building places of amusement, building places where people could get together and discuss corn or fruit or hogs or cattle, or where they could visit. Do you suppose now that our counties would come to that proposition? They have got to be made educational centers. The governor is right when he says they should be made educational centers, and when they are made educational centers they must stick by that. But how are the county fairs now entertained? I can speak for nobody except my friend Pickard and his associates. More than thirty years ago they organized their society up there, and they have kept working and working constantly. But he will soon be dead, and we will have to put younger men in his stead. But they worked constantly, steadily, a few dozen citizens, that is all. We came down there and gave them $1.25 to get in for two or three days. That is all they got. Sometimes they went in the hole. If they got anything over and above their expenses they put it on the grounds to make it better. They never get anything for their labor. I don't know whether Brother Pickard is going to get his expenses down here. That is the way it is maintained. I don't know that it is much of a burden. These men are strong and sincere. My idea is that if we are going to reach the governor's ideal, and I hope we may, the institutions ought to be owned by the county, and all the buildings and the ground and everything put there at the expense of the county, so that the people could spend a week or ten days. Why you cannot run your fairs more than two or three days because you run out of money. Don't you know moreover, if it rains on you once you are a goner? That is the way it is fixed. That is not a very safe proposition, and another thing about it, because of those facts, this poorness, and this anxiety to get along, sometimes we get bad things in the fair, like midways, and such things as that. I can't recall their names. I don't go around them very much but what I have Pickard with me to watch. They will have them, but not because they want them. The fact of the matter is they say, "Why, they will bring the people, they will be money makers," and they have to resort to that in many instances when the fact is if they had their way about it they would not allow them in. No, my friends, the governor is right. It ought to be an educational center, it must be an educational center, and it ought to be put upon a basis so that it can live without this class of institutions. They do nobody any good, and we should always be in favor of putting a business out of commission that does not add something to human pleasure of a substantial kind. I believe that it is right to have pleasures, to laugh and have fun, and athletic sports and all that sort of thing. That is proper, that is part of our being, and we ought to be doing it. The older men ought to be out running around, there isn't any doubt about it, but there are a class of institutions that spring up here and there that do not add a thing on earth to humanity—not a thing. You couldn't put your finger on a single good thing they ever did, and I am one of those fellows that is ready to put them out of commission every time they show their heads. So I say about this county fair, when some of these little concerns crop in I like to see them go out. So when you make it an educational institution through the proper organization, as the governor said, when they are working together, in team work, then you can accomplish. It is one of the worst things in the world to see a county or a municipality divided in its sentiment with respect to these public institutions. They always hurt the institution—always. To see them divided, one pulling one way and the other another. And when they get together they always obtain results. I know of towns in this state where the people have pulled together, and absolutely gone out on the prairie where there was nothing but just one little railroad, and built up a city of four or five thousand people, and you never could tell on earth whatever put it there until you got to talking with the fellows and you found out that they just put it there. That is all there is to it. It all depends on men after all. On people. Of course I don't want you to think that my friend is the best man in America, but I do want you to think that he is an excellent gentleman and citizen. The association up there got out a little booklet which contains a list of men that breed thoroughbred stock, cattle, hogs and horses. This is an old one, made about six or seven years ago. But I say they got up a list of these men, and it has taken well. You will find them at the tables where Mr. Pickard has put them around. They are the latest edition.

And I think they have been making a success financially out of their fair for the last four or five years by similar methods, but they ought to have help. That is what they want, and when we get to that, then we will have agriculture in your model schools, and miniature roads and farms showing the sanitary conditions. It will spread health and everything else just like the great Chautauqua circles. I thank you, gentlemen.

The President: Mr. Pickard, of Harlan, will relate a few incidents that will probably be congenial to most of you. Mr. Pickard.

Mr. Pickard: Mr. Toastmaster and Gentlemen: I think the toastmaster has taken undue advantage of me this afternoon. I had a speech, but I haven't now. I had a temperance speech, and I was down here and found that I was not going to be on the program, and I traded it to Mr. Gelo for a year's subscription to "Spirit of the West." He said they were going to have a temperance meeting next week and he would like to have a temperance speech.

There are some queer things that happen occasionally. The toastmaster and I were riding along in a street car this afternoon. The car was pretty well crowded and the toastmaster was hanging to a strap. The car gave a lurch and he fell over into a lady's lap. She very indignantly gave him a push off and exclaimed, "What kind of a man are you?" He says, "Why—when I came in here I was an Irishman, but now I am a Laplander."

There were two Irishmen. They were window washers. They were up in the fifth story of a building washing the windows. Pat was on the outside and Mike was on the inside. Pat made a misstep and down he went the five stories onto the sidewalk. Mike rushes to the elevator and goes down. There is a big crowd around Pat. Just then there was a doctor came up and examined Pat. The doctor says, "He's dead." About this time Pat began to come to and he said, "Be dad, an' I'm not either." Mike got there about that time and Mike said, "Pat, be quiet, be quiet, the doctor knows best."

The high cost of living has been knocked into a cocked hat and eliminated by the good road boosters. Veterinaries are having a busy time throughout the country transferring a hog cholera hog into one that is immune.

Out in the western part of the state on the Missouri bottoms the hog has been dying with a new kind of cholera, which, for want of a better name, is called "wakefulness." During the rainy season the past few weeks the gumbo mud would gather on the hog's tail in such large quantities that the weight drew the skin back so tight the hog could not shut its eyes and it died of wakefulness.

The present law prohibits the public use of the public drinking cup on railroad trains, but one can go to the water cooler and drink out of one's own cup, then go back and sit in a car seat which a tuberculosis subject has just vacated, and when night comes you can go and crawl into a sleeping berth he has just occupied the night before with no change of bedding, save, perhaps, a change of linen, and sleep with a clear conscience, knowing full well that you have complied with the sanitary laws.

The horse will soon refuse to drink without a drinking cup. The cat will also refuse to drink her milk until it has been sterilized.

The newsboy will hand his morning paper to his customer with a pair of tongs and receive the nickle in a sterilized cup.

The President: Dr. Pickard reminds me some of the Irish lady who said that she knew her son did not drink. "Jimmie didn't drink at all because he was thirsty every morning."

I think, gentlemen, that will probably end the program, so far as the speech making is concerned, and the next will be the business meeting, which will be composed of the report of the secretary and treasurer, and the election of officers. You will now hear from Secretary Rigby.

Mr. Rigby: The following detailed report shows the condition of this association at the present moment, and up to the time of going to press:

FINANCIAL STATEMENT.

December 9, 1913.

Receipts—		
Cash on hand from 1912	$ 17.50	
Dues from 36 Fair Associations	144.00	
Horsemen, 12 membership dues	24.00	
Marshalltown Fair Association	2.75	
Extra Banquet tickets	6.25	
		$194.50
Disbursements—		
Acct. Program preparation	$ 21.60	
Postage	22.50	
Printing	25.75	
Stenographer	9.75	
Lantern slides	12.00	91.60
Cash on hand		$102.90

There are some outstanding sources of income that will increase that, and there may be some expenses. I am not able to tell you exactly what they will be. They will be the expensess of this banquet. So it will leave a very small balance in the treasury for my successor to spend. This brings me up to one point I want to emphasize tonight, and that is the necessity or the importance, if this association is to do the work right, it ought to have more funds. It has not been and should not be the policy of the association to accumulate unnecessary funds, but we are demanding more and expecting better things all the time, and if we expect to grow and fulfill the functions of the association it all costs money. For instance, our banquet cost us twenty per cent more than it did formerly, and some things that we have undertaken to do this year, for instance, the aggressive campaign we have undertaken to interest the owners and breeders and drivers of horses, and it all cost us money. And it ought to be carried on and pushed. And for that reason I am going to suggest an increase in the membership dues for the fairs in Iowa. I think the horsemen's dues should remain what they are. We want them to be with us. That practically covers the banquet and expenses, and that is all we can expect, and I think the work we have inaugurated this year ought to be pushed, and we ought to, just as far as possible, increase the interest in this association, and get as large a membership as possible, because there is so much that can be accomplished by vigorous co-operation. Now, I am not a candidate to succeed myself, and so I feel perfectly free to urge this point strongly in regard to an increase in membership, and the suggestion I have made will make plenty of work for the man who succeeds me. This organization has no excuse whatever for its existence if it does not fulfill its object, which, of course, is higher ideals, to inspire its membership with higher ideals, and raise the standards of the county fairs. That we have tried to do, and with what success it remains to be seen.

I want to say in closing that there are some features of this work that I have enjoyed very much. I have received nothing but kind and courteous consideration from all with whom I have come in contact, and with whom I have had correspondence, and, as I stated in a letter—one of the letters that I sent out to the secretaries of Iowa, we were inaugurating this new feature, undertaking to interest the horsemen of Iowa in our association, and we got the list as far as we could. It was impossible to get a completed list, but the horse papers have very kindly advertised our purpose, and they have given us a lot of free advertising in this matter. And, while we have not a large membership from that source, yet at the same time it is gratifying to know that what we have is good, and I believe we can hold what we have, and we can begin on another year.

Mr. Pickard: I would like to inquire of the secretary, that is in regard to our finances, whether he thinks—the present dues that are being paid are sufficient to meet the expenses.

The Secretary: Of course I have been an active member in getting up this program, and Mr. Mullen has given me rather a free hand, and I feel personally responsible for the financial conditions because I have gone ahead and spent the money, and if there is any deficit I will make it up personally. I am under the impression that it will just about pay out. I got just a little bit enthusiastic about the thing in regard to our lantern slides, and this movement to get the horsemen, and this meant a good deal of postage to do a good deal of correspondence and all that, and I do not propose to run the association in debt. We will not have much surplus.

Here is another reason. I think we ought to add another reason why the membership dues should be increased or else get a cheaper secretary, and that is, we ought to have a permanent record of what takes place at these meetings. Now, there are things said that ought to be put in permanent shape and circulated amongst our members anyhow. We have had this meeting reported, but it is going to cost some money to transcribe the notes. And then, after they are transcribed they should be edited. That is my opinion about it, and I believe it is the opinion also of the executive officers of this association. I talked with Mr. Mullen about it and some of the other members, but we were very fortunate in having Mr. Long, who is now dead, secretary, and he was a shorthand reporter himself, and he made these notes and transcribed them personally. But that was while Mr. Long was secretary. Well, that is the situation. Of course, as I stated, I have taken liberties in going ahead and pushing the thing, and I felt that the association ought to be willing to pay the postage and the expenses—actual expenses—if I was willing to put in the time and do the work, and I do not propose, of course, to leave the association in debt, but that is about the situation. I do think that the membership fee ought to be increased to $5.00. I do not think this will frighten out the various fairs of Iowa. It ought to be a little more, $6.00 or $7.00. There are lots of things that could be done if we had a little money, and things that ought to be done. I don't think that any fair association would stop on this membership fee at $5.00; that gives us a little more money, and besides that, one of the points I want to emphasize now, because I am not going to speak again, and that is this: I think every fair official, or man present here tonight who has been present at the session this afternoon and feels that this association is accomplishing any good, if he has got anything out of this meeting that is worth while to take home, that he should take it upon himself to do good work amongst other fair officials that he chances to meet and tell them about it and help work up enthusiasm for this association and help increase the membership. It is a hard thing for one man to do, and I certainly do not mean that one man has done it by any means, because Mr. Mullen, Mr. Clark, and Mr. Leach, and others that I might mention, have done much. But I want you to understand it in the spirit in which I say this. I am not finding any fault, but I do think we all could do a little more. There is Mr. Pickard, and Mr. Shipman, I sent him a list in his district, and he wrote quite a lot of letters, and we had quite a little co-operation that the secretary appreciates.

The President: What will we do with the report?

Moved that the report be accepted and placed on file. Motion seconded and carried.

The President: What is the further pleasure of the meeting in regard to the recommendation of the secretary?

Mr. Clark: I move that the constitution be amended by striking out the word "four" and inserting the word "five" in place thereof; that is, making the dues $5.00 per year instead of $4.00 per year.

Motion seconded and carried.

The President: The next is the election of officers.

Mr. Pickard: I was going to inquire whether there will be enough money to get out a pamphlet of some kind giving the discussions and the papers, and send it to each member. There are some members that are paying that do not get here; and I think perhaps that would be of benefit to them to get a copy of the minutes of the meeting, the papers, etc.

Mr. Rigby: I would answer that in the negative, and I also wish to supplement my remarks with a special testimonial of my regard and appreciation of Mr. Corey's help in getting up this program, and in co-operating with us and helping to share the expense of getting up this program. I am afraid we would not have done quite as well as we have done if it had not been for that, and we certainly appreciate Mr. Corey's help and the advices of all, as I said a little while ago, that had anything to do. I can't, on the spur of the moment, recall the names of all, though I have called the roll and I think you have all done something. No, there would not be money enough to do that. There would not be over $15.00 or $20.00 left.

Mr. Clark: This scarcity of money always worries me. I want to make this association a proposition. A proposition, I believe, that will be of some benefit to them. I started out to open fairs in 1913 by sending a postal card to every fair secretary, asking him to send me a list of his entries and risks. I received those lists for something like fifty-five or sixty fairs. From that list I have made up a list of nearly seven hundred owners of horses—race horses—in the State of Iowa. The names have appeared on printed list that entered as race horses in the year 1913. I believe that list would be a pretty good thing for the secretaries of the State of Iowa to have. I want to make this proposition to this association: I will have those lists printed and furnish them to any secretary who wants them, or any horseman, at a cost of $2.00, and I will turn over to this association every cent over $15.00 that it is going to cost me to print those lists. If that is worth your consideration, and you think there is any money in it to you, if you want this list, there are nearly seven hundred active horsemen in the State of Iowa, or men who enter horses with the idea of racing. Some of them live in Iowa, some in Missouri, and California—all over the country—and every one of them is a man who entered horses in the races in 1913. Personally, I would have been mighty glad to have gotten a list of that kind at the small cost of $2.00. If we can get thirty or forty secretaries here to take that list, if there are forty, there is $25.00 in it for this association. If there are enough who desire that list, if you will notify me I will be glad to have it printed and turn it over to the association, all in excess of $15.00, the actual cost of printing it.

The President: Gentlemen: You have heard the generous offer made by Mr. Clark of Marshalltown. Is there any action to be taken on that proposition by any of the members?

The first thing now, gentlemen, is the election of the president, and I take great pleasure in placing in nomination for the office of president, Mr. H. C. Leach, of Bloomfield, the gentleman to my left.

Mr. Clark: It has been my lot to serve as president of this association. I tried hard to get out of it for a year, and Mr.

Mullen was the man who said I could not do it. I wish to place in nomination for president for the coming year Mr. John Mullen.

The Chairman: I believe I will entertain the chairman's nomination, placing the nomination in Mr. Leach, of Bloomfield. Is there a second to the motion?

Motion seconded and carried.

The Chairman: I am pleased to introduce to you Mr. H. C. Leach, of Bloomfield.

Mr. Leach: Fellow secretaries, I hope we will take no backward step in the next year, and I want the co-operation of every one of you to make this association as good or better than it has been heretofore.

Moved that the nomination for vice-president be placed in Joe Morton, of Sioux City.

Motion seconded and carried.

The Chairman: I take pleasure in introducing Mr. Morton.

Mr. Morton: Gentlemen, I thank you.

The President: The next will be the election of secretary-treasurer.

Mr. Cameron: Mr. President, I think that the members of this association will agree with me when I say that I think it has been the most successful meeting that this association has ever had, or that I have ever attended. That is due, I think, gentlemen, that is due largely to the secretary. You have heard it discussed this afternoon over there that the success of our county fairs largely depends upon the secretary. I think the success of this meeting that has been held here today has been due largely to our secretary. We are just getting that organization started, and started right. I heard some gentleman from Mt. Pleasant say today, speaking about the new timber that had been gotten in here, and what good papers they have presented here, that if we have a secretary who can hunt out and bring new material into this association, and give us such good papers as we have had this afternoon, I don't like to trade horses in the middle of the stream, and therefore I place in nomination Mr. A. G. Rigby, of Independence, for secretary-treasurer.

Motion seconded and carried.

Mr. Rigby: I suppose it would be ungrateful for me to say that I do not thank you, so I will not say that. Of course I would feel somewhat humiliated, after the work I have done, to feel that none of you wanted me any more; but, on the other hand, I am no longer connected with the county fair, and it does seem to me that there ought to be a change. I suppose that any further remarks are out of order.

I appreciate, of course, the spirit in which this is done, the kindly motive that prompted it, but I do hope that the gentleman's enthusiasm has not run away with his judgment.

The President: I think we all feel that Mr. Rigby, in connection with the fair, is a good fair man, the right man in the right place.

Moved that the meeting adjourn. Motion seconded and carried.

That, I believe, gentlemen, will probably end the business.

Meeting adjourned at 10:30 p. m.

Flock of Canadian Geese, State Game Preserve, Iowa State Fair Grounds.

PART IV.

Iowa State Fair and Exposition Press Reports and Live Stock Awards.

BREEDERS GAZETTE, CHICAGO.

The state fair is no longer a pumpkin show. It is no longer a stock show. It is no longer a horse race. It is an exposition of the multitudinous factors of modern agricultural life. Only the student of this life, or the thoughtful man who views the bewildering diversity of exhibits at a latter-day state fair, can comprehend the breadth of that definition. When fair managers attempt to tap the coffers of a state treasury for additional equipment funds, the financial watch dogs bark at the great aggregate of money locked up for use one week of the year. But if they once viewed the almost unnumbered angles of human interest in the varied displays, and counted the tens of thousands of people that thronged the grounds the week long, ample justification for this unapproached agency of public education would be found.

Iowa boldly challenges scrutiny of the educational efficiency of its state fair. The evolution of nearly a half century of effort, it embraces in its broad classification a range of human activities that is positively startling. Grounded on the land, its foundations are of the earth earthy, but it rears a superstructure of instruction and exposition of the cultured sides of human existence that presents a full-orbed form. In its exhibits it runs the gamut from the field to the university, from the farmyard to the orchestral hall. It leaves untouched no one of the cultural agencies of modern life which are evolving the man and woman fitted for economic production, for intelligent citizenship, for cultured life. This is the epitome of the modern state fair, and no commonwealth more nearly realizes its ideals in this child of the state than Iowa.

The industrious and efficient managers of the Iowa State Fair closed their week's work with every reason for feelings of satisfaction. For one fair at least it did not rain on their exhibition. It has not forgotten how to rain in Iowa by any means, but it omitted to lay the dust on the fair grounds, or turn the low places into artificial lakes, as it has done in times past. Opening the latter part of the preceding week with perfect fair weather, it gradually warmed up to the seasonable corn ripening temperature which characterizes the climate of the maize belt at this time of year—real weather to promote fair-going. Under the stimulus of agreeable temperature, and in keeping with the fair-going habit acquired by the

Iowa farmer, the turnstiles played merry tunes all week, each day totaling in considerable excess of the corresponding day a year ago. The exhibit was worthy of the attendance; the attendance was complimentary to the exhibit. By and large, it is doubtful whether so gratifying a record in all departments has ever before been written at Des Moines.

A dilatory legislature left small time for the erection of a women and children's building, for which $75,000 was appropriated. Plans were drawn but held in abeyance for a year. The contract has been let for a structure which will mark a fine advance in the educational work of such institutions. Over against the hillside opposite the agricultural building, will rise this new monument to woman's work in the farm and city home. With its lecture rooms, its completely equipped model rural school, its big exhibit room for the work of women's and children's hands, its quarters for the baby health contests, its day nursery, play grounds and comfort stations, it will embody the acme of modern thought for the physical and mental well-being of women and children. Sad is the need of new equipment in the sheep department, and the legislative committee was shown this crying necessity, but considerations of economy limited appropriations for the fair, and the gentle shepherds gallantly and gladly said "Way for the women," and agreed to wait longer for the money for their department. No little money has been spent in ways that yield a maximum of comfort without spectacular appeal. Nearly 18,000 square feet of cement walk has been laid; an open ditch through the grounds sewered with a four-foot drain for over 1,200 feet; the old wooden building which sheltered the bench show last year, moved and converted into a fine dining hall; other wooden buildings razed and removed, so that little of inflammable construction remains in view; a game bird preserve of twenty acres set aside at the northeast end of the grounds; roofs of many of the buildings painted, and much improvement in streets perfected.

The ambitions of the managers are so large that they sometimes refer to them as dreams, but dreams do come true at times, and the consistent record of faithful educational work achieved by this fair will without question open the way to the treasure chest for the fulfillment of actual and tentative plans for the complete equipment of the grounds.

It has been written that the improvements this year have not been spectacular. This is true, and yet the clearance of the grassed space in front of the Administration Building of its ruck of old wooden shacks and tented eating houses, and its conversion into a plaza with bandstand, rises to the heights of unqualified commendation when improvements are mentioned. This is the beginning of a definite plan of landscape engineering near the entrance of the ground which will demonstrate that the managers have the aesthetic as well as the material education of visitors in view. The remainder of this space will eventually be cleared of all concessions and parked with forest trees, and it is expected that its southern side will in time contain a stock pavilion more nearly adequate to the requirements than the present structure.

The farmers came. It is a farmers' fair. The city folk were much in evidence, especially at the night shows, but it was essentially a gathering of farmers' families. Up on the high knolls amid the oaks, were 2,000 tents filled with farmers for the week, scattered over the forty acres set aside for this camp. This feature is proving increasingly popular. And they came in motor cars from miles away. Only the extreme width of the fair grounds streets saved the parking problem from becoming acute. An 80-foot street affords room for the parking of autos, backs to the curb, with a generous remaining passage way, but another year even the thousands of feet of streets will not suffice for the storage of autos during the day, and parking grounds must be provided. The automobile show under the grandstand was somewhat circumscribed this year by reason of a disagreement between the fair managers and the Des Moines auto dealers' association, but inasmuch as the number of autos on the grounds one day was estimated at over 10,000 it was enough of a show.

Street car traffic was as inefficient as usual, but the steam road hauled its thousands at a time. A twenty-five-cent entrance fee is taken at night, and the turnstiles show that approximately one-third of the total attendance for the week passes through the gates for the night exhibitions. Additional fees are required for seats in the stock pavilion and in the grand stand, to witness the eight exhibitions, so that these shows are real revenue-producers.

Attractions are played to their limit. All work and no play is not the motto of these fair managers. The airships and the parachute drop were the "thrillers" this year, but time would fail to tell of the diversity of amusement and entertainment features over the grounds and before the grandstand at night. In the stock pavilion was staged a night horse show of astonishing character. Entries were drawn from Iowa, Illinois, Wisconsin, Missouri and Manitoba, thus lending international character to the exhibit. Among the entries were horses that had won high honors at the International of Olympia. The horseless age chatter would be stilled in the presence of such a show. It was supplemented by parades of draft horses and of the beef and dairy cattle, presenting an arena performance that was of topnotch interest and educational value.

Iowa does not educate its population solely in the practical. The high-class band and opera music furnished by Liberati, Henry, Conway and others, has been developed in the past years. This season's innovation consisted in a recital program of the Des Moines Philharmonic Choir of 150 voices. The numbers partook of a religious nature, as they were presented Sunday evening, the famous oratorio choruses receiving capital rendition. A large orchestra provided the foundation for the concert, and instrumental solos and orchestral ensembles were interspersed with the program. That the fair crowds appreciated this delightful feature was attested by the well-filed pavilion. Fully 7,000 people were in attendance.

The midway shows were so hidden from public gaze that some of them became overbold and required police interference. Iowa has this objectionable feature so well pared down that it could now be completely eliminated. The management has been progressive in handling this evil, and a step farther would secure the unqualified approval of thoughtful folk, and the certain safeguarding of the ignorant or careless.

Horse and cattle entries lay on an even keel with last year. The count tipped up and down with some of the breeds, but totaled around 1,000 head. Swine lost materially by reason of the scourge of swine plague, and the announced requirement that only vaccinated hogs would be admitted to the grounds. The impossibility of securing sufficient vaccine led the authorities to waive the rule at the last, but empty pens were in evidence. More sheep could have been accommodated also, but the growth in the entries of sheep from Iowa was gratifying. As usual wide stretches of territory were laid under tribute in drawing entries for the stock department. More importers of stock have been represented on the list of exhibitors, but never more breeders. The quality suffered a little in some sections, and rose to triumphant heights in others.

The agricultural building holds Iowa exhibits. Some enterprising states, valuing rightly the yeomanry of the Hawkeye State, have aforetime secured space in this building wherein to exploit newer sections, but they have now taken to tents and booths, and their spaces have been more suitably filled with collective farm exhibits from Iowa farms. These hold rare interest to visitors by reason of their attractive presentation and their variety and excellence. The judges pronounced these exhibits considerably more satisfactory than last season, notwithstanding the fact that the fair comes too early to emphasize Iowa's chief agricultural product. Some old corn was on exhibition, but only a few ears of the 1913 crop—probably an average yield, although far below the bumper crop of last year—now rapidly aproaching maturity.

The dairy exhibit in this building is impressive but scarcely adequate. The time is coming when this industry will ask and deserve a separate building. The dairy and food commission continues its valuable work of teaching by precept and example the importance of modern methods of dairying and warning of the latter-day adulteration of food stuffs. In the refrigerated glass exhibit case the lesson of profitable production through breed improvement was driven home. A square of butter represented the annual production of the average Iowa dairy cow—140 pounds, which at thirty cents represented a gross income of $42. Over against it stood a huge block of butter, representing the yearly yield of the world's champion butter cow, Banostine Belle DeKol, weighing 1,270 pounds and valued at the same price per pound, at $381. It is the highest province of a fair to enforce just such lessons.

Poultry entries increased 43 per cent. There were 2,060 birds crowded into the pens, against a previous mark of 1,400. This was in face of the bad season for chicks. Ample proof that the turkey industry does not thrive in Iowa was found in an exhibit of only nine birds. The laying competition for pens of six fowls each attracted much attention. The winning pen produced twenty-two eggs in five days. The college at Ames put on a fine poultry exhibit. Refrigerated poultry products were on display, five birds were killed, dressed and boned at definitely announced hours daily, and interested home managers exhausted both demonstrator and superintendent demanding more. A prospective feature during the coming year is a poultry contest among school children. Twelve county organizations of enthusiastic youngsters already exist, and more are promised.

The chronicle halts as the implement section is approached. It grows more unwieldy of description with the years. The bark of the gas motor is over it all, as challenging the substitution of its vapory force for human brawn in many fields of exertion. The big machinery manufacturers were liberally represented, and plowing demonstrations by gas and steam motor drew their crowds. Roadmaking machinery was an impressive display. The "silo city" was the center of attraction. Sample of silos built of wood, vitrified tile and cement competed for the favor of farmers. In the handsome machinery hall special emphasis was laid on the inventions which make for the comfort and convenience of the farmer and his family. Palpably, manufacturers believe that the Iowa farmer has reached that period of affluence when modern inventions for the home as well as the farm appeal to him. Horse-drawn vehicles were in ample display, and electric lights for night use on buggies were shown. Storm buggies with the suggestion of auto fronts were the newest styles among the exaggerated fashion in sidebar and endspring buggies.

The agricultural college at Ames continues its instructive exhibit of the work in various departments, supplemented by lectures. Indeed the lecture feature has been much amplified. Demonstrations in the use of cholera serum claimed much attention. The boys' encampment is working well and meets the end in view in its establishment. Wherever the visitor turned novel and instructive exhibits greeted him, proving the fundamental educatiton idea of the fair. It is growing in these graces ennually.

The plan of opening the fair on Thursday and closing the next Thursday proved so satisfactory to the directors that it is believed it will be continued. Protests came from some exhibitors at starting the heavy judging on Saturday, as it required absence from home over Sunday if they witnessed the contests. The Hereford judge was not present on Saturday, hence steers of that breed were sent through under another judge. The mare classes in the draft breeds were first considered, as exhibitors objected to showing stallions on Saturday before the heavy country attendance had arrived. The concluding Thursday registered an attendance of 18,000, the most suscessful closing attendance in many years, and a strong programme was presented at that night's show. The attendance and receipts for the week aggregated record height in the history of the fair. A surplus of about $50,000 will remain. The further experiment with the middle-to-middle-of-week plan will be watched with interest. New York tried it faithfully and finally abandoned it.

AMONG THE BEEF BREEDS.

THE SHORTHORNS.

This section fell only a little short in numbers of last year, but it missed appreciably some of the strong circuit herds which in former seasons opened their campaign here. Eastern exhibitions caused some absences and resulted in split show herds. The exhibit was largely from Iowa and revealed some capital breeding and fitting enterprise. While the greater strength lay in the younger classes, where some animals of the highest promise were decorated with ribbons, the toppers in the older rings represented acceptable show stuff in many instances. Iowa breeders are earnestly and successfully supporting the fair and gradual improvement in the class of cattle shown reflects credit on their efforts. It needs scarcely be said, however, that with the absence of most of the professional exhibitors, the display of the breed failed considerably to measure up to some past standards. Honors were allotted by Capt. T. E. Robson, London, Ont.

Familiar names appear in the older classes. Sultan Mine went through to the grand championship, and Dale's Gift was first among the cows, but the two-year-old Maxwalton Missie 2d gained the senior championship, only to lose crowning honors to the beautiful white junior yearling Village Flower 2d. The Cumberlands as usual required reckoning with in the younger classes. The prize list shows a well-defended state front against the two invading herds from Wisconsin, and the herds from Indiana, Illinois and Minnesota.

THE HEREFORDS.

The whitefaces continue to claim undisputed superiority among the beef breeds on this ground in the uniform show character of their cattle. With seven less exhibitors than in the Shorthorn section, but with eight more entries, the contrast in show form and finish throughout the exhibit was very distinctly favorable to the whitefaces. It was an old-time show, made by old-time exhibitors, seasoned warriors in the mimic warfare of the arena. With united front Hereford breeders have for the past few years been waging a vigorous campaign at the big shows, displaying timber of the most attractive character, presented with a finish that left nothing wanting. This is the opening of just such another campaign. It finds the whiteface forces strong in individual equipment, strong in their unity of effort. It was a brilliant uncovering of a fall campaign.

Fire was struck in the opening class. The two-year-old winner of last year, Prince Perfection, was counted on for champion honors, but eliminated in the opening round. Fairfax 16th bears a trifle of evidence of prolonged campaigning, but Prof. J. C. Kinzer, Moscow, Idaho, who worked with discrimination as judge, liked the older bull. He in turn was defeated for the championship by the sensational senior yearling Repeater 7th, quite precocious as a representative of the latter-day Hereford show bull. Perfection Lass came out of the two-year-old class of the past season into premier honors clear to the purple, although stumbling blocks beset her path. The contestants in the championship lists measured well up to the high traditions of the breed.

THE ABERDEEN-ANGUS.

The doddies have come again. They came with a rush. For the past few years exhibitors of Angus have not by any means been as well prepared to meet the public at the opening of the season as strongly as at its close. It is different this year. Double in number of exhibitors and almost double in entries, the comely blacks swept through the arena in repeated enthusiasm-arousing classes. Not a few of the names on the prize list are familiar, but almost without exception, age has added to their strength. Fitting evidently was earlier taken in hand, and the problem now is not to finish them for the International, but to hold bloom. The herd knows no equal in this respect, however, and notable achievements should await it at the court of final resort. An absence of sensational and outstanding animals characterized the display, together with a well sustained strength in most of the classes. If quality fell below at times in some of the younger rings, it would bound up again in succeeding shows. E. T. Davis, Iowa City, Ia., was called on to make a number of close decisions, as it required a balance of claims to reach a conclusion. Angus exhibitors have reason to feel complacent over the reverberation of their opening gun. The list of exhibitors uncovers some new names.

Erwin C is quite a massive bull now, and impressive in the characteristics of a sire. He made his way to final honors. The cow Blackcap McHenry 88th, had more opposition to overcome in reaching the same pinnacle, but she carries much of championship timber, with her scale and character and flesh. The younger female classes held much of high promise. The blue ribbon winners among the youngsters were highly creditable to the men who produced and fitted them.

THE GALLOWAYS.

The Galloway exhibit was credited with a new Des Moines exhibitor, the Capital View Ranch of Kansas, and most worthily did it add to the display. Charles Escher distributed the ribbons. The bull classes were rather uneven, but the champion Fearnot of Maples is a worthy pattern from his celebrated sire Standard Favorite. The cow classes stirred up more competition and the winners of the three older classes were little short of sensational. Capital View's aged cow bore away the purple for grand championship, but both this and the senior award were hotly contested. She finally carried off her honors on account of the greater smoothness, length, thickness of side and forerib, and mellow handling quality. The two-year-old wore a rather nicer Galloway head and a little more development of midde, and the yearling showed the same stretchy low-built type that made the aged cow so attractive. From a quality standpoint the show was highly satisfactory.

THE POLLED DURHAM.

J. H. Miller, Leemon Stock Farm and Achenbach Bros. contributed a show of this rising breed that rivaled anything of the past as to quality. Sultan's Creed in his three-year-old form has developed a roan form of balanced proportions and his lines were packed with meat and mellowness from every angle. He is a highly worthy, if not superior, successor to the great line of show bulls that has come from the Miller herd. The aged cow went through for champion, and is fit for honors among the Shorthorn rings. Deep, wide, capacious and maternal, a four-year-old that has already produced three calves, she is a fit example of the proper breeding and show combination. The roan Loch Dale Roanette duplicated her International junior championship by repeating the award at Des Moines. She is very sweetly feminine and carries a middle and frame that bespeaks a future in the breeding herd. L. G. Shaver made the awards.

THE RED POLLS.

After the crest of every wave one finds the trough, and so last year's unequaled lineup of Red Polls fell in marked contrast for this year's show. The awards were predominantly Haussler Bros., who have added the Davis herd to their holdings. Their champion bull was a full-framed fellow of properly balanced type and their herd showed every evidence of careful study and preparation. W. S. Hill contested every award with strength and bore away the female purple on his beautiful lined matron Nancy. In her class she competed against Gazelle, a cow of almost duplicate type, that lacked slightly in scale although somewhat better fleshed. Prof. Andrew Boss made the alignments.

THE FAT STEERS.

The step in advance in this section lay not in the worth of the cattle, but in the abolition of the time-worn system of committee judging by the several breed arbiters on grand champion awards. Tom Cross of Clay, Robinson & Co.'s selling staff at Chicago, was selected for this task and performed it in approved showyard manner. His champion steer and herd were both outstanding. The grade Angus champion of Rosenfeld's was a very thickfleshed mellow two-year-old that quite surpassed in scale and quality every competitor in the unsexed classes. With the able assistance of a fair yearling and a first-class calf he carried away the herd honors. Saunders and Tow made their usual commendable showing of Shorthorns and Herefords, respectively. The free-martin calf shown by Wickersham took the grade Shorthorn championship, and the handsome snappy purebred yearling of Oloff's that wore the purple in the Shorthorn division drew many favorable comments. The display of these excellent steers in a season of beef famine and climatic drouth is highly creditable to the steadfastness of Iowa steer feeders.

THE DAIRY CATTLE.

If state fair exhibits afford any indication of a commonwealth's progress, the milch cows of Iowa are forging ahead more rapidly than any other class of animals. A 13 per cent increase in the number of entries afforded the largest exhibit of this sort at any fair west of the Mississippi. The Holstein and Guernsey shows passed the high-water mark and the Ayrshires, Brown Swiss and Dutch Belted lent color and quality to already engorged displays. The Jerseys lacked somewhat as compared to last year's numbers, but the tops rivaled in quality the good ones of that season. It is seldom that such a competent list of judges has worked simultaneously and this year's group bore away the respect of every spectator and exhibitor. The addition of Sanders' herd of Dutch Belted classes gave scope and added variety to the color scheme of the display.

If one had predicted five years ago that the dairy interests of Iowa would parallel or surpass the beef interests, he would have been classed with the rest of the cranks. Yet the seats outside the ring were as thickly crowded on the east side where the dairy animals were shown as on the opposite side where their beef relatives disported themselves.

HOLSTEINS.

When a state show develops the quality sufficient to smother the Waterloo champion of last year it means that something is doing in dairy circles. One of the largest and hottest contested exhibits of Holsteins ever made at a state fair came to Des Moines, and the judgment of W. J. Gillett was frequently taxed to a high degree, always with satisfactory results, however.

The winner of the aged bull class and the grand champion ribbon was a newcomer in showyard circles. Sir Jessie Fobes Piebe Burke, Copestake's massive herd bull, stepped into the ring at a weight of 2,700 pounds. He combined with this frame a rare smoothness of shoulder, a tremendous capacity of chest and a full-made open-ribbed middle. His coat showed evidence that he had just come from pasture, but his skin was as mellow and pliable as the most exacting judge could desire. The veining and indications of mammary development in the bull were superb.

The sensational contest was found in the aged cow class of thirteen entries when Galloway's Fay Jewel Beauty, last year's breed champion at Waterloo, yielded first and second places to Nelson and Iowana entries. Chloe Artis Jewel of Cedarside, that went through for champion. was possessed of as beautiful a head, as straight lines, as level and well-proportioned a rump and as capacious an udder and veining system as one finds in a big cow. A slight cutting up between the quarters of the udder made an arguing point for the followers of the second and third animals, and the deep clean-cut freshness of Minnie Stienstra 2d and the fine feminine sweetness with size in Fay Jewel Beauty made friends of everyone. It was a case of an abundance of riches. The three-year-old Colantha Johanna of Cedarside showed beautiful youthful quality on large lined frame, and her udder and veining system were so pronounced that she was favored by some against the old cow. High showyard merit appeared in each individual as the rings progressed, and the standard set in this sensational competition will probably remain the ideal for several years.

JERSEYS.

H. G. Van Pelt distributed the ribbons among a display of Jerseys that failed to reach last year's numbers, but that strongly rivaled the tops in that exhibition. Mrs. Fabyan's Ocean Blue has come through the past year in excellent bloom and is packed with Jersey character in every line. Dering's herd deserves a word of high commendation, as his first appearance on the circuit was highly successful. His entries teemed with quality and were so full of capacity that they could rightly be termed big "little cows." The udders were well placed on all. The champion cow was possessed of fine matronly outlines and promises to threaten the supremacy of the leaders in some of the larger shows. Chaffee's herd possessed many excellent animals, but they had not yet attained the bloom and fit that the showyard calls for. This handicap is something that the future can easily remove.

GUERNSEYS.

Iowa has rejoiced in some excellent shows of this breed in former years, but never has quality gone clear down the line in every ring so markedly. Although the older bull classes were each headed by outstanding animals, yet this fact by no means decries the contestants down the line. Mr. Marsh uncovered what promises to be the breed's sensation this season in his recently imported Hayes Cherub 2d, a short age three-year-old whose every line exudes Guernsey milkiness. He carries the richest secretions and was so sensationally patterned that the purple award was unquestioned. That product of the two Marsh champions of previous circuits, Bopeep's Mar of Iowa, has grown away from his baby form of the last National Dairy Show in a most acceptable manner and headed the yearling class in easy style. The senior bull calves by their number and closeness in merit, probably gave Charles L. Hill his worst puzzler in the male awards, but his alignments called forth only satisfied comments. The lean-lined promise of these babies augurs well for the Guernsey herds of the next few years.

The cows brought forth a new blue ribbon wearer in the capacious Glenwood's Hazel. Her freshness, trimness and rich color, coupled with a tortuous mammary spread from a level-floored tight-set udder, gave her the advantage over Fox's thirteen-year-old campaigner Essie Jeweler. Age does not mar the beauty of the matron's head nor the milkiness of her proportions, but both udder and belly swing looser from her lower line than in former shows. It was not until the senior yearling class that the female classes began to get sensational and then each added ring outshone the previous one. Both judges and breed followers proclaimed this the best show in the point of continued excellence throughout all entries ever brought together in an American showring. The stretchy imp. Moreland Aquamarine emerged on top of the senior yearlings and by her remarkable character went through to the championship. As an example of successful inbreeding this heifer is notable, her four grandparents all being sired by the same bull, imp. Golden Secret.

AYRSHIRES.

Only two herds were entered in the Ayrshire competition and the seasoned preparation of the Seitz entries was such that Prof. Kennedy gave them all awards over the Galloway contestants. This was Wm. Galloway's first year as an Ayrshire exhibitor. The champion bull was a very high type of the breed, square-lined, mellow, with a highly prepotent temperament. The champion cow was somewhat stretchier than the breed demands, a point in which she lost to her stablemate that stood second, but she was a grand type of dairy matron, open-ribbed, mellow-skinned and long, level and capacious in the udder. Some discussion arose in the three-year-old heifers over the placing of this year's Highland champion second, but the length, leveler rump and handling quality were sufficient to bring the blue to her herd rival.

BROWN SWISS.

Each year sees refinement, utility and development in this breed, and the present exhibition showed clearly the more distinct imprint of the American idea of dairy character. Allynhurst's champion My One Boy is a most worthy son of their old campaigner Casper C., and enforces a lesson in constructive breeding. The purple-bearing cow, Arlene, carried productive lines worthy of emulation in any of our milk breeds. Ayers' veteran Anna was placed third in the aged cow class. Born on the show circuit, she is beginning her fourteenth consecutive year of campaigning. The development in nervous temperament of all the animals shown is so marked that it may be termed another milestone of progress. Hugh G. Van Pelt made the allotments in a manner that evoked popular favor.

DUTCH BELTED.

All awards went to F. R. Sanders, Mesa, Ariz., as the sole exhibitor.

AMONG THE SHEEP.

Perhaps the most interesting feature in connection with the Iowa sheep show was the fraternal feeling that exists among the exhibitors. This development reached its culmination in the organization of an Iowa Shropshire Breeders' Association Monday night. Prof. M. G. Thornburg of Ames, superintendent of the sheep department, was elected secretary and treasurer, and a series of resolutions were passed commending his initial attempt as sheep superintendent, and recommending that the board engage him for the coming year.

Three hundred and fifty entries stepped into the ring in the sheep department, 150 of which were Shropshires. The interesting feature of the show in this case, as in many other departments, was the list of Iowa exhibitors. Harry Eddingfield produced both the Iowa sweepstakes ram and ewe. The ewe was pronounced by judge John Campbell of Ontario as one of the nicest types of American animals that he had ever passed upon. She was not in high enough flesh to defeat McKerrow's imported ewes in the open classes, but her fresh femininity, pink skin, true Shropshire fleece and wonderfully set legs made her very attractive. The good will among exhibitors reached its culmination on Wednesday morning when judges, officials, exhibitors and ringside "fans" held a fellowship meeting, and drank quarts of lemonade from the beautiful sweepstake cups that were won by Eddingfield.

In the Iowa Shropshires the rivalry was keen among G. A. Fawcett (who won on his ram lamb in the open class, defeating McKerrow's imported animals), E. L. Bitterman (who dipped deeply into the money awards) and Eddingfield. In the open classes McKerrow had everything his own way. A yearling ram carried away the championship. The Iowa sheep show has improved 100 per cent in the last two years, and the concentrated efforts of these earnest shepherds merit the recognition of the fair management to a degree warranting new pens and buildings for their accommodation.

In the Southdowns a very high-class competition developed between the imported animals of Arnold and Phillippi. The yearling classes were best and very close, the champions of each sex being developed from these particular ranks. The Hampshires were in proper condition to win in open stiff competition. The two-year-old ewe was of exceptional quality, while the ram lambs maintained the size claims that the enthusiastic breed advocates continually advance. The Cheviot show lacked competition, but Postle's entries surpassed even their usual merit. The Dorset ranks were weak, but among the fine-wools the Rambouillet entries of Cook and King furnished the thrills common to the International. McKerrow contributed his usual high-class Oxford offering, although some very worthy home-bred individuals competed against him from the Croxen pens. As a whole, the excellent sheep show presages a glorious future.

THE SWINE.

The ravages of cholera were echoed in this section and in the feeding pens scattered over the state. This disease, and a ruling requiring all show hogs to be vaccinated—which later had to be revoked, as serum enough could not be obtained—account for the lightest entry list in several years at this fair. The quality of the exhibits with the exception of that of the Poland-China was the equal if not the superior of that of former years.

The Duroc-Jerseys made the largest showing. A ringside comment which aptly fits the situation ran: "The showing of the 'reds' reveals what progress may be made in hogs by consistent showing and breeding." H. E. Browning of Illinois and W. W. Waltemeyer of Iowa were the most successful exhibitors. The grand champion boar Big Wonder shown by Stevens is a remarkable hog. A. J. Lovejoy, the judge, rated him especially better in the way that he carried out at the tail than the other young boar and smoother than the aged boar High Model.

In the Poland-Chinas some very good animals were seen and the major portion of the big prizes went to J. E. Meharry of Illinois. His pigs showed especially well in their uniformity and were very wide and deep. Apparently the hardest class was the twelve to eighteen-months-old sows. In this show two sows owned by Mr. Barker pushed the two Meharry sows hard, but they had hardly so much depth and width as their rivals, although they had a slight advantage in length.

The Chester White exhibit was noted for its uniformity, and in every class there was a strong fight for the favorite ribbons. As a result the prizes were well scattered among several breeders. The champion boar, shown by Mr. Somerville, combines size and bone with quality and excellent type. The Chester Whites show a steady and consistent improvement in the makeup of the exhibit at this fair.

In Berkshires the Iowana Farms were the largest winners, although pushed hard and surpassed in some classes. While not so numerous as some other breeds, the showing of the "pugnoses" included excellent individuals.

The Hampshire show approached closely in numbers that of former years. The champion boar was of unusual length and the favorite of the ringside. The Saltone Stock Farm had things largely its own way in the sow classes. Its champion sow Pearl's Choice combines in a large measure size, strength of bone and smoothness.

In the bacon breeds the Large Yorkshires led in numbers. The champion Large Yorkshire boar, owned by Mr. Manley, is one of the best ever shown. Mr. Kunkle won the largest share of the premiums, although he was not able to make a clean sweep, as Davidson's and Burk's entries pressed close and often passed him. The only Tamworths were those of J. B. Machoy of Iowa. The judge commented very highly upon these, especially the aged sow.

The judges were as follows: Poland-Chinas, Lloyd Mugg, Kokomo, Ind. Duroc-Jerseys, A. J. Lovejoy, Roscoe, Ill.; Chester Whites, W. A. Hoover, Oskaloosa, Iowa, and Harry Lewis, Geneseo, Ill. Berkshires, N. H. Gentry, Sedalia, Mo. Hampshires, Wilson Rowe, Davenport, Iowa. Large Yorkshires and Tamworths, C. C. Roup, Talona, Iowa.

THE HORSE DISPLAY.

By a margin of 75 head the largest number of horses ever stabled on the Iowa fair grounds reported this year. The gain was chiefly in the light horse sections, due to improved classification in that division, but the wonderful strides made by Iowa Belgian, Shire and Percheron breeders are evident, particularly in the case of the Belgian rings, as importers stated that they had never seen even at the Brussels show such capital rings of three-year-old and two-year-old females. The draft horse is becoming more firmly entrenched in the practices of Iowa farmers, and although this year showed a diminished number of importers yet in only a few instances did the rings suffer much in quality. The development of the industry in Iowa to this firmly entrenched point is largely the result of the educational and advertising possibilities of the state fair.

A valuable modification in the classification separated the yeld mares from those with foal and permitted the showing of brood mares and foals together, each counting 50 per cent. The result of this division was most marked in the Shire and Clydesdale classes, although some excellent entries appeared among the Percherons and Belgians.

PERCHERONS.

In some respects the Percheron show this year was disappointing. In the mare classes down to the yearlings there was much lack of uniformity. A very tidy type of mare appeared for Dunhams in Ilda, which won the yeld mare class, but she was closely pressed by the low-set massive chestnut Hemine. This mare was favored by many, but had scarce the quality, feet and action possessed by the winner. The champion of the sex was found in the winner of the yearling class, the sensational Couceorous. She was a black filly of beautiful top line with exceptionally square-set limbs and feet, extraordinary bone and quality—in fact, all of the attributes in a Percheron of her age. That she comes to the front as the development of the futurity class is peculiarly fitting, demonstrating most certainly what such encouragement to Iowa breeders can bring about. In the aged stallion class Jeun, a very impressive son of Carnot, went up over the Dunham entry because of his scale, substance and drafty finish. The wearer of the red was a better mover. McMillan's Matador, winner of the two-year old class, fell reserve to Jeun. He is one of the shortest-backed youngsters that has been exhibited in recent years. To his other charms he adds an exceptional quality and a most impressive head and neck. William Bell, Wooster, Ohio, did the judging.

BELGIANS.

A very high-class show of Iowa Belgians developed. Prof. W. J. Kennedy of Ames was called on to align some of the strongest classes ever seen in a Belgian show ring, and possibly the strongest ever exhibited in this country. In the stallion section Jules Remi, a very massive drafty blue roan of exceptional action, headed the list. The champion came from the three-year-olds, a red roan, neatly turned, straight, traveling youngster with lots of scale. Some very good animals appeared in the younger classes, the ruggedness and weight of the entries appealing very strongly to the onlooking Iowa farmers. In the mares a sensational individual came to the front for Lefebure. Anna de Balcan is a grand-moving mare with capital feet, great quality and the draftiest proportions. She was shown in rather thin condition, but her excellences were so numerous that she drew very strongly on spectators and judges. Thirteen three-year-olds and twenty-one two-year-old fillies furnished the sensation of the show. The size, correctness and uniformity of these entries were remarkable, and called for the keenest appreciation that any female ring outside of the futurities drew forth. The Belgian horsemen are making a strong bid for the favor of Iowa farmers, and one or two future exhibitions on a parallel with that of this year will firmly entrench them in Hawkeye favor.

CLYDESDALES.

The failure of the McLay stables to appear left such a gap in the rings of this year that the glories of the display of one year ago were merely a memory. Nevertheless, the winners were in most cases very creditable individuals possessed of the lines, character and tidiness so desired in the Clydesdale. Prof. E. A. Trowbridge, Columbia, Mo., made the awards.

Ford's Prince Cedric, a typical Clydesdale that lacked somewhat in size, headed the aged class in an acceptable manner. After that there was a lack of uniformity and consequent difficulty in placing. Many of the ringside favored the big, drafty Forest King, that was placed fifth as a successor to Prince Cedric. However, he showed to disadvantage because of dullness in action, and this accounted in part for his lowly position. In the three-year-old class the fight between Baron Defiance and Osco Pride was rather close, Osco Pride showing nicer lines, better ankles and being rather toppier, but scarcely possessing the action, clean quality and feet of the first entry. The two-year-old class developed the champion in the handsome Come Again. He was by far the boldest type of stallion in the entire male show, and while slightly undersized, he won his position without difficulty. Three fairly good stallions appeared in the yearling class, the size and draftiness of the winner being apparent. A large, rugged, square-legged foal, rather thin in flesh, bore away the honors in his division. In the yeld mares the matronly Lady Parmiston won easily, while the fine-moving stretchy Amarillys with her stallion foal headed the mare and foal class. The two-year-old ring brought forth the champion female in Princess Mae, a mare of razor-like quality, yet bearing lots of substance throughout. She had a deep body and capital action, but might have been a little neater about the top lines. In this respect Osco Bell that stood next to her rather excelled. The third prize, Mary Queen of Scots, drew the favor of the ringside. She was sold to Conyngham Bros., Wilkesbarre, Pa., at a reported price of $1,500.

SHIRES.

A capital exhibit of Shires was brought forth, partly as a result of the generous offer of medals by the English Shire Horse Society and loving cups by the American Shire Horse Association. As usual Trumans carried off the bulk of the money, but exhibits of F. J. Woltmann, H. O. Wilkinson, Wm. Crownover, Geo. Eggert and Fred Huston, all of Iowa, made a large share of the competition bear a decidedly Iowa tinge. The champion purple in stallions easily went to Truman's Coleshill Diamond King, a massive bay drafter of the desirable American type.

In the female classes the sensation of the show was the famous old veteran Tatton Aurora, shown in her twelfth year at a weight of 2,375 pounds. Age scarcely has left a mark on this matronly mare, and the only signs of passing life left with her are those seen about the face and the somewhat reposeful line over her back. The drafty Moulton Primella that won in the mare and foal class was awarded reserve to Tatton Aurora. She is a beautiful mare whose type bespeaks utility and service. In the two-year-old class a ringside favorite failed of place when Truman's Coldham Charm was left outside the money. However, the mare that won the class was of exceptional quality and evenness of lines, and possessed the beautiful finish and style of going that the English and Scotch breeders have taught the horse markets to look for. Alex. Galbraith, of Manitoba, made the awards.

THE DRAFT HORSE BREEDER'S FUTURITY.

With progressively longer steps, the valuable incentive to enlarged draft-horse breeding offered by the "Live Stock World's" futurity yields continually more of the desired results. J. H. S. Johnstone, who has supervised the contest for the last three years, took records on thirteen male and thirty-five female Percheron yearlings, three male and eleven female Clydesdales, nine male and sixteen female Shires and five male and nine female Belgians. The sensation of this show was the first prize Percheron filly that went through for the female championship of the breed, and that was sold to Senator E. B. White of Virginia for $2,000.

The filly that topped the Shire class was fully as important, her last year's record of winning foal being firmly maintained by a magnificent 1,500-pound draftiness seldom seen in such growthy proportions. Soderberg's Clydesdale winner combined beauty of line with high-class draft form, while Rosenfield's Belgian youngster was freely typical of the low, thick draftiness the breed's standards require.

The excellence of the females in each breed as compared to the males augurs well for future American draft production. While the impress of the world's best stallions is fairly certain of being secured, the foundation of the breeding stud is the mare stock. Economy often limits the breeder here and the ascendency of this magnificent lineup of future matrons foretells with accuracy the industry's future. Something of the worth of these Percherons may be estimated when it is known that three fine-typed imported fillies sired by three of the greatest stallions of the breed, failed to land within the first twelve places.

Not alone in the Percheron breed was this excellence marked. Big drafty Shires that rival their elders in frame and their colleagues in weight filled places of honor all the way down the line. One or two rugged-built Clydesdales stood out among a wealth of the tidier type, while the full-made forms of the Belgian entries gave ample reason for the tremendous strides this breed is taking toward the popular favor of cornbelt buyers. When one compares the rings of last week with the rings of four years ago when undeveloped youngsters appeared to the number of three or four in exceptional instances, the impetus of this commendable futurity can be at once realized. The ribbons were distributed by the regular breed judges, Senator White working with Mr. Bell in the Percherons, J. H. Truman assisting on the Belgians, R. B. Ogilvie aiding on the Shires, and Chas. R. Taylor co-operating on the Clydesdales.

DRAFT GELDINGS AND MARES.

The draft gelding and mare competition was divided into two groups, one for Iowa competitors and the other open. In the open class Trumans exhibited two magnificent three-year-old over-a-ton Shire geldings that rejoiced in the names of Woodrow Wilson and Teddy Roosevelt. When the awards were made these two followed last fall's precedent at the polls, leaving Woodrow Wilson on top to later carry away the gelding championship. This pair promises to furnish a sensation in the gelding shows at maturity. The winners in the Iowa class stood next to them, a pair of gray Percherons, Larry and Mike. They were five-year-olds of a mighty useful sort. In the harnessed team class, the Truman Shires had everything their own way, while in the Iowa division a neat-lined straight-going team of Clydesdale mares, owned by Hixson, made off with the honors. R. B. Ogilvie, of Chicago, did the judging.

THE LIGHT HORSE SHOW.

The saddle show was fairly strong, the improvement in the Iowa classes being especially marked. The four-year-old stallion ring and the class for aged mare and gelding were the outstanding competitions of the breed. The competition was extremely close, and Wallace Estill's mare, Miss Cliff, won only after an hour's arduous rivalry. The combination five-gaited and three-gaited classes were also very good, a large number of entries being out and the Iowa exhibitors furnishing strong competition. The judge was Walter Palmer, Ottawa, Ill.

The heavy harness exhibits were decidedly the best that the Des Moines show has ever witnessed. Honors were very well divided among the Pabst Stock Farm, the Wild Rose Farm, O. J. Mooers, and D. C. Cameron of Canada. The Pabst and Cameron entries formed the sensation of the show. Walter Palmer and J. O. Williams of Fort Collins, Colo., made the awards.

In the classes for jumpers the horse show took a rather wide departure from former years. The fact that it was a new feature prevented the high-class competition that prevailed in the other light horse departments. Nevertheless it may be considered an established feature, as the interest of the ringside and exhibitors both was markedly aroused. The military horse competition also showed a hazy conception of the type, if the variety of entries be an indication. Maj.-Gen. James Rush Lincoln of the Iowa National Guard distributed the awards in consistent style.

SHETLAND PONIES.

The only breed that need not fear motor competition is the Shetland Pony. The Iowa fair has long been known as a chief center of exhibition and the 1913 show maintained the standard of years past. Heyl's well known King Larigo entered the contests eight times to bear away seven firsts and a championship. He has thickened far beyond last year's promise. In the class of aged mares nineteen motherly pets that all fell almost on the forty-one-inch mark met in competition. The show was of a higher order of excellence than usual and Prof. Kennedy's ratings were well received. The awards in full were published last week on page 360.

BOYS' JUDGING CONTEST.

The stock judging contest for boys under twenty-one was the hottest in years. One hundred and ten aspirants put in six strenuous hours to learn who would be the winner of the free scholarship offered at Ames. The $200 award went to Harry H. Meneough, Grimes, Ia., a lad who has worked consistently at farmers' short courses and in boys' agricultural clubs to make a finished judge of himself. The other four winners were respectively: Vernon Guthrie, Newton; Harry H. Webster, Runnells; J. Leo Ahart, Dow City; and Raymond Teachout, Imogene. The last prize is $25 and is to be applied to the winter short course at Ames. The first four boys are barred from further competition, but the fifth is eligible for next year. So close was the contest that five other boys were given honorable mention by the fair management.

IOWA HOMESTEAD, DES MOINES, IOWA.

Iowa's prosperity is reflected in its state fair. Inaugurating the grainbelt series, the Iowa exposition is looked to to set the pace for the others. In the state where prosperity has become a habit, which leads the nation in the *acreage* of the world's principal crops (corn, wheat, oats, hay and potatoes) and which leads the world in the quantity and value of live stock of all kinds, the annual state fair is visible proof to the outside world that "in all that is good Iowa affords the best." The 1913 Iowa State Fair, which opened at Des Moines Wednesday of last week and which closes today, is so much bigger and better than any of its predecessors that it testifies to a year of prosperity and progress the like of which has never been seen before.

With ideal weather, the thousands of visitors to Des Moines this week were enabled to attend the fair with the minimum of discomfort. Iowa has been particularly fortunate in the matter of weather this year. While the states west of it have been visited by hot winds and drouth and the states north of it have known death-dealing winds, Iowa has experienced a season of almost ideal crop-growing weather. The results were visible at the state fair, in splendid exhibits of grain and of live stock and in the prosperous appearance of the people. The fair opened with refreshing breezes and continued, with a clear sky and lowered temperature, until its conclusion. Seldom, if ever, has a more nearly ideal brand of weather been furnished for fair visitors than was served up by the weather man to the visitors in Des Moines the past week.

Added to this splendid weather was the ideal condition in which the state fair grounds were placed and kept. The time was, and not so many years ago, when the eyes of the visitors were outraged by littered grounds, in which waste paper, watermelon rinds and all manner of refuse and riff-raff combined; when the nose was incensed by all sorts and conditions of odors, from unsanitary outhouses and from uncleanly lunch counters and booths; when the ears were pierced by nerve-shattering, sirenic whistles, the raucous shouts of ill-mannered "barkers" and the continuous din of fakers, each endeavoring to make more noise than his competitors. All this was absent this year, and for this relief much thanks. Never did the Iowa fair grounds present a more cleanly appearance. Oiled roads kept down the dust, a plentiful supply of clean and comfortable benches made it possible for all to rest, while the eye was greeted with beds of cannas and other beautiful flowers, in full bloom, that were a constant delight. The number of foul-smelling refreshment stands was far smaller than usual, entirely lacking in the places given over to resting spots, where the people might sit in comfort, enjoy the band concerts, the vista of flowers and waving flags and enjoy themselves as at a high-grade and beautiful park. In no one particular is the state fair management to be more highly commended this year than in the cleanliness of the grounds and the constant catering to the comfort of the many thousands of visitors.

At this writing (Wednesday evening) the attendance has been maintained at such a high figure, day by day, as to lead to the opinion that last year's record of 270,000 would be approached and possibly passed. Notwithstanding the refusal of the railroads to grant the reduced fare ordered by the last legislature, every incoming train has been loaded to the guards, while thousands of farmer-owned and farmer-driven automobiles have added their quota to the constantly increasing throngs. The cash receipts will probably be larger than last year and this despite the fact that the prices for the amphitheater were reduced this year, as was right and proper.

Visitors to the Iowa State Fair have become accustomed to seeing larger and finer exhibits of live stock than are to be found at any of the other state fairs. The parade of prize winners on the closing day has come to be an affair of the greatest importance, eclipsing anything in art or literature, a million-dollar parade of prize winners without a peer. Visitors to Des Moines this week found a live stock exhibit which, while not breaking former records, is well abreast of former exhibits. In the matter of swine alone is the exhibit any smaller than heretofore, the serum restrictions imposed by the management (and lifted only at the last moment) resulting in cutting down the exhibits in this department to approximately half. The cattle display was as good as has ever been made, while the horse exhibit was larger and finer than ever before seen at any state fair.

With sixty acres of space devoted to farm machinery the exhibit of the mechanical aids to farming was an eye-opener to those who had not realized the extent to which the farmer is summoning the inventive genius of man to the aid of his brawn and brain. The machinery exhibit has been growing from year to year, constantly outgrowing its enlarging quarters and showing the extent to which the Iowa farmer is becoming a better customer, year by year, for the latest and most perfected mechanical aids to the gentle art of tilling the soil.

With so much that is good and instructive in the exhibition as a whole, it would be impossible to single out all the meritorious features deserving of special mention. A couple will have to suffice. The exhibit of the United States Office of Public Roads, a branch of the Department of Agriculture, was not only attractive in itself (Iowa being one of the three states of the Union to receive this display), but it also opened up a possibility which future fairs should not overlook. Nothing is more important to the farmer than good roads. Schools, homes, happiness itself depend upon easy means of transportation. The road exhibit this year showed models of highways which link farm and town together in a perfect union of harmonious co-operation. The exhibit should be larger next year and should deal with local conditions, as well as national. A splendid start has been made and 1914 should show a road-making display which will be a practical object to every observer.

As usual, the Iowa State College building was worthy of several visits. Several new features made it more valuable than ever before. The display of wireless telegraphy was interesting, but the display of a model farmstead and the offer of the college experts to furnish blueprints for laying out farms and building farm homes were so practically valuable as to stand out chief among the many splendid exhibits in the building. Any visitor who failed to spend an hour or two, at least, in the college building failed in one of the most important parts of his mission to the fair. The daily lectures on all sorts of topics, from the administering of serum to cholera-infected hogs to the proper preparation of staple foods for the family table, with the care and training of children and the growing and feeding of alfalfa thrown in for good measure, were of inestimable value. The state college is doing a splendid work, in a most attractive way, at its annual fair exhibit.

One hundred and five boys took part in the corn and live-stock judging contests, competing for the Ames college scholarship. First prize went to Harry H. Meneough, of Grimes. The other prize winners were Vernon Guthrie, of Newton; Harry H. Webster, of Runnels; J. Leo Ahart, of Dow City, and Raymond Teachout, of Imogene. The following boys won honorable mention: Arthur Meints, of Dixon; Leslie Turnbull, of Bradyville; Fred J. Paulus, of Hampton; Chester Viers, of Swan, and Lawrence Boyer, of Red Oak. The contestants were required to judge two rings each of horses, cattle and swine and not less than two varieties of corn. The first four prizes were scholarships in the Iowa State College of Agriculture at Ames, ranging in value from $200 for the first prize to $100 for the fourth. The fifth prize was $25 in cash. The annual competition invariably arouses great interest among the farm boys and is an all-the-year-around incentive for good work and careful study of the scientific end of farming.

All attendance records for Monday were broken this year when the total for the day reached 53,368. This was 13,184 more than had passed through the turnstiles on Monday of last state fair. The fact that the passes had been cut down, together with the larger gross attendance, made the day's receipts the largest for any Monday in the history of the Iowa fair, over 11,000 more than for the same day last year. Monday was given over to the implement dealers of the state, a fitting recognition of the prominent part they are playing in the agricultural development of Iowa. Tuesday was Old Soldiers' day and a large number of veterans of the civil war were present, enjoying a reunion and a chance to talk over old times and to see the wonders of the new times. Sunday was Music Day, splendid band concerts by Liberati's and Henry's bands and a night program by the Philharmonic Choir bringing a record-breaking Sunday crowd out to the grounds. Tuesday goes down in history as another record breaker, there being 65,814 persons on the ground, thereby exceeding the best day of previous years by upwards of 1,000 persons.

By next year the fine new woman's building will be erected, occupying a conspicuous spot on the grounds. The last legislature provided the funds, but the building could not be erected in time for this year's fair. The future babies' health contests will be held in the new building, fitting housing for one of the most important and attractive departments of the entire fair. This is the third year that Iowa has held babies' health contests, with increasing interest and profit. Babies are examined by skilled doctors and psychologists, not for personal beauty but health and mentality. The value of these contests is shown by the fact that a little farm baby which failed to get any place two years ago was brought up the following year on the advice given by the doctors who had judged her at the show and returned a year ago to win honorable mention. If this can be done in only one year's time, the possibilities of the campaign have no limit. The Homestead wishes to go on record as saying that there is no more important or valuable work being carried on under the state fair direction than this work of improving the human stock through the annual babies' health contest.

For the first time in the history of the Iowa State Fair the grand champion sweepstakes for the best individual collective farm exhibit were won by a woman. She is Mrs. Fannie Klinck, of Clarksville, and has been exhibiting farm products only four years. She was born and reared on an Iowa farm, but never gave any particular attention to farming until a few years ago. The quality and rank of her exhibit has climbed up from fourth place in 1909 to first place this year, and that in the face of the strongest competition. Mrs. Klinck lectures on agriculture twice a week in the Waterloo schools and teaches agriculture at teachers' institutes. While she is not a graduate of any agricultural college she is thoroughly scientific.

SHORT-HORNS.

The showing of the cosmopolitan breed led into the ring at the initial show of the Great Western Circuit was strong in numbers, but not up to standard quality in all the classes. While there were many excellent individuals of the breed shown, quite a number of the animals appeared in poor state fair condition and finish which served to detract from the general impression gained of the Short-horn showing. One hundred and five head from the herds of eighteen exhibitors, fourteen of which came from Iowa, two from Wisconsin, one from Minnesota and one from Indiana were led before Judge T. E. Robson, of London, Ontario, Can., who tied the ribbons and gave universal satisfaction.

Wisconsin carried off both grand championship honors. Sultan Mine is showing in his usual good form, easily winning first in class, senior and grand championship honors. Cumberland's Type, the senior bull calf shown by C. A. Saunders, of Manilla, Iowa, won first in a strong class of calves and also carried off junior championship honors.

In female classes some very good animals were brought forward and in the younger classes there was very keen competition. The two-year-old Maxwalton Missie 2d, owned by Anoka Farms, won first in a strong class of two-year-old heifers, and was later made senior champion female. She was, however, defeated for grand championship honors by Village Flower 2d, quite a remarkably good junior yearling heifer from the same herd, that won up through her class and junior championship honors. The senior heifer class aroused much interest, and there was close figuring in placing the first place upon August 112th. Many at the ringside who watched the placing were in favor of the heifer, Silver Mysie, an unusually sweet heifer from the herd of G. H. Burge, Mt. Vernon, Iowa.

ABERDEEN ANGUS.

The "Doddie" show at the 1913 Iowa State Fair will go down in history as one of the best Angus shows ever staged at Des Moines. While there may have been shows that were more replete with numbers, there has not been a show at Iowa in recent years so remarkable for general good quality and fitness, taking the classes throughout. Iowa may well feel proud of her Angus breeders who furnished the most of the winners of outstanding merit at the 1913 fair. Of the eleven exhibitors who led the ninety-six head of these cattle before Judge E. T. Davis, of Iowa City, Iowa, only one appeared from outside the state of Iowa.

In both male and female classes, animals in good condition and well forward were led into the ring. Erwin C. was an outstanding winner in class, and easily fought his way up through senior championship and grand championship honors. Prof. W. J. Kennedy of the Iowa College, who has seen the best of the breed on both sides of the water, considers him the best Angus bull he has ever seen.

There were many hotly contested classes among the females. In the aged cow class there was keen competition and close figuring between Blackcap McHenry 84th, and Thickset Myra, the former finally winning by a narrow margin. Thickset Myra is a cow of great depth and thickness and is showing in good condition, while the former is a cow of remarkable smoothness and finish. Blackcap McHenry fought her way to grand championship honors in female classes.

Among the younger classes there was much hot competition, and it is seldom that one has the opportunity to see such universal uniformity among cattle classes. The senior yearling bull, Ebony of A. 3, is a bull of much merit and was made junior champion of the show. In female classes the senior yearling heifer, Queen of Rosemere 2d, was made junior champion female of the show. The best of the prizes went to Iowa breeders, W. A. McHenry being the heaviest winner. O. V. Battles followed him quite closely in many of the older classes and in some of the younger classes there was quite a distribution of the awards.

HEREFORDS.

The least one could say of the Hereford show at Des Moines is that it was excellent. Too much could not be said in its favor. In general quality it was above par. The best the breeders of the country had to offer were forward and showed in good form. One or two of the bull classes were short in numbers, but what was lost in those classes was more than offset by the appearance of some of the young bull classes and by all the female classes. All told, 117 head were led into the ring and passing judgment upon them gave Prof. J. C. Kinzer, of Moscow, Idaho, a difficult task in many of the classes.

In the aged bull class Fairfax 16th had everything his own way. He is still showing in good form and his remarkable depth, thickness and finish made him winner of senior championship honors against his brother, Beau Fairfax, from the same herd, who won first in the two-year-old class. He failed, however, to win grand championship honors, being defeated in this race by the senior yearling and junior champion bull, Repeater 7th. Here is a remarkable young bull with great depth, length, thickness, quality and finish. Showing as he does in yearling form, he gives the appearance of a mature bull, and it seemed to be the universal opinion at the ringside that he was entitled to the honor accorded him. Some of the young bull classes gave Professor Kinzer a difficult task, and placing them took a great deal of time. The appearance of these young animals in the pavilion was really a feature of the cattle show.

In the aged cow class, Perfection Lass was early picked as winner, but the real contest in this class seemed to lie between Nora Fairfax and Disturber's Lassie 4th for second place. The latter is a thick animal, but is inclined to be a trifle patchy. The smoothness and the straight back of the latter finally won her the second place.

The junior yearling heifer, Miss Repeater, winner in her class and junior champion female, was defeated for grand championship honors by the cow, Perfection Lass. The young female classes aroused considerable interest and the judging work was watched with keen interest which may be an index to the returning interest in beef growing.

GALLOWAY.

The entire Galloway exhibit, consisting of thirty-eight head, was shown by three exhibitors, two of whom came from Kansas and one from Iowa. Mr. Chas. Escher, Jr., of Botna, Iowa, placed the animals and gave universal satisfaction. As a whole the quality of the showing was good and while there was lack of quality in some of the young bull classes, there were some excellent female classes shown.

C. S. Hechtner, of Chariton, Iowa, succeeded in carrying off the greatest number of blue ribbons in the classes. His aged bull, Imp. Optimist, won first in class and was made senior and grand champion bull of the show. The junior yearling bull, Ivan's Favorite, won in class and junior championship competition. In female classes, Daisy Dimple, from Capital View Ranch, Kan., was first in the aged cow class, and won senior and grand championship honors. Hechtner's Lassie 2d, of Maples, a senior yearling, was made junior champion of the show.

RED POLLED.

There was a really representative showing of the dual-purpose breed at the Des Moines show, and a great many of the good individuals testified to the marked improvement that has been made in the breed in the last decade. The one-time high tail, head and weak back, points too common among these cattle, are rapidly disappearing and are discredited in the show ring. Among the cow classes there appeared some really good double-purpose cows that approach the farmer's idea of useful animals. Three exhibitors, all of whom come from outside the state of Iowa, made the showing of forty-nine head led before Prof. Andrew Boss, of the Minnesota Agricultural College, who made the awards.

In the male classes, Teddy's Best, a long, deep bull of useful type was first-prize aged bull, and senior and grand champion bull of the show. Teddy's Charmer, first-prize junior yearling bull, was made junior champion.

In female classes, Professor Boss found the cow, Nancy, a deep, large-bodied cow, that had the requirements of a good milker and scale and quality enough to show that she possessed beefing capacity. She was placed first in her class and later was given senior and grand championship honors, competing with the junior yearling winner and junior champion female, Rochelle, for the latter honor. Both of the female championship winners were shown by W. S. Hill, of South Dakota, who also succeeded in capturing a great many of the blue ribbons as well.

THE POLLED DURHAM.

The showing made by the Polled Durhams was one of the lightest ever made at the Iowa State Fair. Three exhibitors brought out the twenty-seven head. Mr. L. G. Shaver, of Kalona, Iowa, who placed the animals, experienced no great difficulty in picking the winners, and in many classes there was not only no competition, but only one animal. A great many of the blue ribbons and both grand championships went to the herd of J. H. Miller, of Peru, Indiana. Leeman Stock Farm, Hoopston, Ill., had junior champion heifer in Loch Dale Roanette, and Achenbach Brow, of Washington, Kansas, came in for a good share of the winnings.

DAIRY CATTLE.

Iowa is one of the most fertile of the corn-belt states; her broad, black acres raise millions of bushels of corn which supply numberless steers and hogs with unexcelled feed for fattening purposes. But farming is no longer the simple operation it was once considered; as the corn-belt agriculture becomes more and more complex the dairy cow will take a larger and a larger place in the economics of corn-belt farming. The silo, the keystone about which such a noted dairy state as Wisconsin has built an enormous industry, is ever ready to convert some of the corn now being fed to fat stock into succulent feed that will fill the milk pail in winter and make the creamery patron grin broadly when he inspects the latest check. Land is increasing in value, and until the animal is found that will convert a given amount of roughage into human food more economically than the cow, the white-suited milkman must remain with us.

At the Iowa State Fair this year, there was a goodly representation of Iowa breeders of dairy cattle and Iowa animals. In the Holstein show Iowa men won the grand championships in both male and female classes; an Iowa breeder captured most of the important Guernsey blue ribbons; only among the Jersey and the Brown Swiss breed was Iowa not represented. It is true that in many instances the Iowa breeders still have a long and rocky road to traverse, but they must recognize the place of the cow. This paper confidently predicts that in ten years from now the Iowa breeders of pure-bred dairy cattle will rank with her breeders of high-class horses, beef animals, and hogs. If Wisconsin can invade a corn-belt state and sweep the Short-horn show, Iowa should be equally versatile and give the Wisconsin breeders a "run for their money" at the strongest Wisconsin dairy stronghold.

GUERNSEYS.

Four complete herds, besides a lone representative from a fifth exhibitor, were entered at the Iowa State Fair this year, a pleasing contrast to last season when the Guernsey show was somewhat of a disappointment to the lovers of this Channel Island breed of dairy cows. C. L. Hill, president of the American Guernsey Cattle Club, who tied the ribbons, found some exceedingly difficult classes to place, especially among the young stock. The cows, while excellent in most respects, were not so strong as they might have been, and these same exhibitors will have to strengthen that department of their herds if they hope to compete later against some of the crack eastern herds. Not quite ninety head of cattle were lead into the ring.

A newcomer in the American show ring, Marsh's bull, Imp. Hays Cherub 2d, a consistent winner across the "pond," easily captured the senior and grand championships. He is an outstanding individual, clean cut and alert, carrying himself well in and out of the ring. The Waterloo breeder also showed the junior bull, Bopeep's Mar of Iowa, a worthy son of the great Glenco's Bopeep. The champion cow, Glenwood's Hazel, and the junior cow, Imp. Moreland Aquamarine, were also recruited from the same herd.

On the whole the stock showed great improvement in size and ruggedness without the sacrifice of quality. It has been pretty well proven that the larger cows in a breed are the best producers, so if the Guernsey men continue to breed for size they are likely to avoid the pitfall into which another great breed fell. In one or two instances Judge Hill placed animals second or third which would have been first had they been slightly larger. The nervous, well-bodied, but refined individual seems to be the goal towards which the breeders are working.

JERSEYS.

Considered as a whole, the Jersey show was disappointing. This does not mean that no good animals were exhibited, but simply that the classes were ragged, containing individuals that should have been sent to the barns. Judge H. G. Van Pelt, of Waterloo, Iowa, expressed himself dissatisfied with some of the sixty animals led before him, commenting on a lack of really outstanding Island "beauties" as well as the poor fitting many had received. The Jerseys seem to be in danger of falling largely into the hands of "fanciers," men of wealth who can obtain the best show animals on the market. As a result, the really good Jerseys are beyond the means of the farmer breeder; and until the farmer of the middle West regains control of the breed, working ever towards more ruggedness and perhaps greater milk production, the Jersey must remain the plaything of the few. The friends of the Jersey need not despair, however, for within the last few years a few breeders with the courage of their convictions have been showing animals of combined capacity and quality. The whole question, hinges, of course, on the ever-present antagonism, or seeming antagonism, between the show ring and the milk pail. The Jersey is a breed in which production may be combined with beauty and grace; she is a cow with an undisputed place in the economics of dairying, and every effort should be made to prevent its displacement by breeds less exactly fitted for its peculiar place.

Nelle Fabyan, of Geneva, Illinois, won the senior and grand championships on her aged bull, Ocean Blue, a trim, good-sized individual. In the junior competition the judge discounted Chaffee's Dairymaid's Combination because of a slightly buff nose in favor of Dering's calf, Rose's Fairy Boy. Ocean Blue's value as a sire was demonstrated, his get winning first in the get of sire contest. Last year Smith and Roberts, of Beatrice, Nebraska, and Ed Bruins, of Fairwater, Wisconsin, won most of the blue ribbons.

HOLSTEINS.

A splendid showing of Holstein cattle was made before Judge W. J. Gillett, of Rosendale, Wis., especially satisfactory from the Iowa point of view in that Iowa men carried off the premier honors. Although some of last year's best exhibitors were absent, their places were taken by new men. Perhaps the most outstanding group, as well as the most difficult one to place, consisted of eighteen of as likely senior heifers as one could wish. C. A. Nelson, of Waverly, Iowa, finally captured the blue in this group. The same breeder also led the senior and grand champion cow into the ring, his Chloe Artis Jewell emerging triumphant after some exceedingly close competition. In fact, the exhibit of aged cows was of unusually good quality, the three leaders being of outstanding merit. J. C. Copestake, of Ames, Iowa, a newcomer in the show business and who entered his herd at Des Moines with great reluctance, won the grand championship on his senior bull, Sir Jessie Fobes Piebe Burke, an individual of unusually strong parts.

AYRSHIRES.

Mr. Adam Seitz, Waukesha, Wis., had entered his usual herd of twenty head of this beautiful Scottish show cattle, but he wasn't allowed to carry away all the ribbons without a contest, as was the case last year. This fall William Galloway entered fifteen Ayrshires, and while his herd has not been established long enough to enable him to compete on equal terms with the veteran Wisconsin breeder, he was able to carry off some of the good ribbons. Seitz's bull, Bargenoch Gay Cavalier, one of the best in the country, repeated his record of former years by overcoming all competition, but the Waukesha man was disappointed in several of his importations, the cows not living up to their Island show records.

BROWN SWISS.

The Brown Swiss are getting better every year. Prof. H. G. Van Pelt, who placed the classes, was well pleased with the showing, discovering some excellent individuals and some exceedingly close competition. As might be expected, however, of a breed which many once considered dual purpose, its greatest weakness is coarseness. But as the Brown Swiss men gradually eliminate some of the outstanding weakness of this rugged

Alpine breed as show cattle, a refined stock which gains in producing power in direct proportion to its refinement, will result.

Only two herds were shown, the Allynhurst Farm herds, of Delavan, Wisconsin, and the H. W. Ayers' herd, of Honey Creek, Wisconsin. Marion T. Anderson, who exhibited last year, failed to reappear. But these two herds, owned as they are by veterans of long experience in breeding and showing, were of the type to make friends for the breed. The wish was expressed several times in the ring that one or two of the eastern herds could have been present, so as to form a roundup of the best Brown Swiss herds in the country the Brown Swiss cattle being grouped largely in Wisconsin and eastern states.

My-One-Boy, the four-year-old son of Casper C., was given the senior and grand championships, defeating the junior championship, Casper Brown of Allynhurst, a calf of great promise. Zell A., a son of last year's champion, was also a formidable contender for the honors. Among the cows, Cuma, now a veteran of many shows, failed to repeat, being defeated by Belle of Grattan, a cow of considerable refinement. Arlene, always dangerous, made a strong bid for senior honors, while the junior ribbon was given to a calf, Ernetta G.

DUTCH BELTED.

Mr. Frank Reed Sanders, of Mesa, Arizona, who had entered an even dozen of the belted cattle, was the only competitor for the ribbon honors. His stock, considered from the Dutch Belted point of view, was almost uniformly excellent, only a few really poor show individuals being discovered while several were outstanding. Mr. Sanders by no means gave Iowa the benefit of his entire herd, as he has sixty or more Dutch Belted cattle making an eastern circuit. There are only a few hundred of this breed in the United States, and these are distributed very largely in the extreme Southwest, the corn belt and dairy farmers never having taken kindly to the type. Axel Hanson, of Ames, Iowa, placed the ribbons.

DRAFT HORSES.

The importance of the Hawkeye state as a horse center is realized when it is considered that a larger percentage of farmers in Iowa raise horses than in any other state. This would indicate a great demand for pure-bred draft stallions, as well as brood mares. Horse "soup" or a general diffusion of nondescript equine blood is fatal to a healthy horse breeding status anywhere; the market demands heavy horses of refined quality, and this demand is met only by mating large mares with the best pure-bred stallions. In the past, Iowa farmers have had to import many of their best from other states; the Iowa State Fair drew on outside studs for some of its best exhibits. In the natural order of affairs Iowa horsemen should dominate their own fair in point of numbers as well as quality, and lead any other similar institution in the country. Perhaps one of the most potent influences to bring better horses to Iowa and her fair is the futurity show. This year the futurity competition brought from the Percherons, and to a slightly lesser degree among the other breeds, demonstrated only again the popularity of this showing of colts and fillies. A healthy indication of the horse breeding trend was shown by the relatively smaller number of imported horses, compared with fairs some years ago, that competed for the largest money. Iowa may continue to hold her exalted position in the horse raising world, and in addition, contribute an increasingly larger quota of the breeding stock for the corn belt and contiguous states. This year, in all classes of horses and mules, slightly over 900 animals were exhibited, the best record in the history of the fair.

PERCHERONS.

The Percheron is at present the most popular of all draft breeds in this country and the numbers of Percherons shown at Des Moines is a fitting tribute to the breed. "Never before was such a showing of young Percherons assembled at one show in America," was the sentiment of some of the men in a position to know, and never before was there such an assemblage of really good yearling stallions and mares in this country.

The futurity classes in the Percherons were the real sensational features of the horse show, and served to demonstrate that Americans can breed a good string of yearling Percherons when they receive the proper encouragement and set about to accomplish results. The futurity works good in many directions. The small scale breeder or farmer breeder is encouraged to grow his colts and fillies at a time in the animal's life when growth means so much and when most farmers neglect the animal. Young horses which are really meritorious are often hid away and not developed simply because they are not shown. The futurity brings them into the limelight. Not only will the good be reflected toward the farmer, but the demand for good stallions will help the importing business due to the stimulus given the man who wishes horses to breed from.

Mr. Wm. Bell, of Wooster, Ohio, who awarded all the prizes in the open classes, and in the futurity classes, was assisted by Sen. T. B. White, of Leesburg, Virginia.

The yearling stallion class brought out eighteen good colts and it was no easy task to place them. Principal, a massive, growthy, and well balanced and well formed colt with good movement, from Ethelwood Farm, Mondovi, Wis., was finally placed at the top of the list—a placing in accord with the opinion of horse fanciers. The yearling filly class was the strongest filly class ever seen at an American show. Thirty-three were brought forward, and here was a case of quantity and quality combined. Conceorous, a black filly of wonderful conformation, was selected to head the list. There was hardly a place one might fault her, and it is certainly a credit to her breeder, Mr. J. A. Buswell, of Bradford, Illinois, that such fillies can be produced in America. One of the advantages of the futurity is that there are many prizes offered so that one need not feel that he must be a larger breeder to compete.

In aged stallion classes, Jeun, a large black, with plenty of scale, and well balanced with a great back and rib, was placed over Jorat. Koran, the winner in the three-year-old class, is a remarkable horse of great size, scale and conformation. In two year old classes, there seemed to be some discussion as to whether Matador, a great bodied colt or Legiste, a colt with a wealth of bone, would be placed at the head of the list. The blue finally went to Matador who was brought out in fit form.

Dunhams, of Wayne, Ill., were out with strong animals in all classes, and succeeded in drawing a great many of the blues. McMillan & Son, of Rock Rapids, Iowa; W. S. Corsa, Whitehall, Ill., and Truman's Pioneer Stud Farm also sent forward some fine specimens of the breed.

In female classes, Ilda, from the Dunham stables, won first in the aged mare class; Achsie, from the stables of McMillan & Sons won first in the three-year-old class, and Lyonaise from the Dunham stables won first in the two-year-old class.

BELGIANS.

"Not only is this year's showing of Belgians a good one, but it is one of the best held at Iowa for years," declared Prof. W. J. Kennedy, of Ames, Iowa, who tied the ribbons for this popular breed of drafters. There is a reason for the growing favor of the breed as the farmers are discovering their merit as drafters. Good, heavy animals, especially strong in the middle, they represent a decidedly useful type of horse. The Belgians have a tendency to be low in the back, flat in the ribs, and short in the legs, and these defects were somewhat in evidence on the animals led into the ring, although the improvement that has been shown in these respects in recent years has been great. Today the Belgian horse holds its own with any breed on the great open market and not infrequently outsells them all. The futurity classes, about which the interest of horsedom at a fair is usually centered, were below the regular classes on the whole, and to this extent the show was disapointing. Governor Major, a brown colt owned by C. W. McDermott, and Miss Rosengift, a bay filly by C. A. Rosenfeld, of Kelley, Iowa, captured the premier futurity stakes and the silver trophies for their respective classes. In all, $490 was divided. One of the strongest open classes was the fillies over two and under three, twenty-one good animals being led before the judge. On the whole, the female classes were somewhat superior to the colts and stallions shown.

ENGLISH SHIRES.

The English Shires are rapidly coming to the front, but the showing of Shires at Des Moines was devoid of spectacular features. There were some top notchers in the list, but some poor ones were led before the judge; and several did not get into first money because coarseness had been eliminated at the expense of size and power. Alexander Galbraith, the noted breeder of Clydesdales, tied the ribbons, and he was inclined to discount foreign taint of coarseness. When the futurity classes were led before him he called R. B. Ogilive, secretary of the American Clydesdale Association, to his assistance. Some of the colts were rather mediocre, although the fillies were a strong class. The young stallion, Tatton Eldorado, owned by L. N. & O. B. Sizer, of Fisher, Ill., and the filly, Pinecrest Primrose, owned by Frank Huston, of Waukee, Iowa, were awarded the futurity stakes and trophies. In point of quality, the show was about up to the standard of other years, while in point of numbers, about 100 animals were actually led into the ring.

CLYDESDALES.

If 1912 was Clydesdale year at the Iowa State Fair, 1913 certainly was not in spite of the fact that several good classes were shown. The absence of such veterans as Galbraith and McLay seriously crippled the Clyde showing, while the individuals actually led into the ring were in many cases insufficiently fitted. Some of the animals were noticeably weak in the feet, while others lacked Clydesdale quality. Prof. E. A. Trowbridge, of the Missouri College of Agriculture, who judged the classes, called William Jones, of Williamsville, Illinois, to assist him in awarding the futurity stakes. Osco Beauty, a bay filly owned by A. G. Soderberg, of Osco, Illinois, was placed at the head of the ring, although there were those among the by-standers who had expected Lady Stewart, owned by W. V. Hixson, of Marengo, Iowa, to lead her class. Hixson's colt, Warren's Favorite, defeated Baron Ideal, H. H. Ford's colt for the trophy. Prince Cedric, the aged stallion shown by Ford, and Amaryllis, the mare shown by W. L. Houser, of Mondovic, Wis., were among the leading individuals. According to the experience of other years, a large number of the better Clydesdales were home bred. Perhaps the exceptional demand of Canadian and African buyers of the breed in the Scottish market may have something to do with this condition, but it may be due fully as much to the fact that Clydesdale breeders are studying their problem and trying to evolve an American type. Perhaps the sooner American breeders of live stock devote themselves more conscientiously to building up their stock, rather than depending on their almost unlimited purse strings to enchant a prize-winning herd or stud over night, the better it will be for legitimate stock industry and the farmer breeder in general. Americans must learn European patience, for without it their money will not achieve type permanency.

SHETLAND PONIES.

It was a record-breaking year in the Shetland pony class at the Iowa State Fair. The judge, W. J. Kennedy, pronounced the showing the best that has ever been made at any state fair. Iowa furnished the major portion of the exhibitors, though Illinois put up stiff competition in most of the classes.

SWINE.

The swine department of the Iowa State Fair from the standpoint of numbers alone was cut squarely in two as compared with the record of former years. There were between 1,500 and 1,600 hogs in the rings, but this number was sufficient to maintain a lively interest throughout the period of the judging which lasted until Wednesday night. The cutting down of the numbers this year was due to a variety of causes, chief among which was the compulsory serum treatment, as ordered by the state sanitary board. This ruling, although changed as it were the last minute, was in a measure unfortunate this year because of the fact that a sufficient supply of serum was not available to satisfy all exhibitors. In the second place there were too many cases where serum purchased from outside sources failed to render immunity. This meant dissatisfaction all around and in some cases disgust. Now that the effect of the sanitary board's ruling is known it is plainly apparent that the year 1913 did not furnish the psychological occasion for action so drastic, though it cannot be denied that where there is sufficient good serum available to answer all needs the general plan of rendering hogs immune before being exhibited is sound. It is hoped that a sufficient supply of good serum will be available for use next year and we would at this time suggest that breeders be allowed to choose whether to immume their hogs before leaving home or to have them treated under proper state fair authorities after they reach the fair grounds.

The hogs treated with serum at the Iowa State Fair in 1912 passed through tne ordeal without missing a feed and not a single case has been reported where the treated hogs transmitted the disease after their removal from the fair. The object of the sanitary board, as well as the state veterinarian's desire is to check disease and to this end the state fair authorities and swine breeders generally can afford to work in the closest kind of co-operation.

SHEEP.

Most of the sheep classes at the Iowa State Fair were well filled. Importers were on hand this year with their flocks in the pink of condition, but they found stiff competition among exhibitors of American-bred sheep. The Shropshire classes were especially strong and the judging of this breed was watched with much interest by large numbers of state fair visitors.

WALLACES' FARMER, DES MOINES.

The fifty-ninth annual Iowa State Fair opened at Des Moines last Wednesday, with every condition apparently favorable for a record-breaking exposition. The oppressive heat of the first half of the week changed as if by magic into a cool, bracing temperature that made ideal fair weather, and exhibitors went about their preparatory work with enthusiasm.

This year the fair opened on Thursday, a day earlier than heretobefore, and will close a day earlier, thus giving exhibitors who go to St. Paul and Lincoln an opportunity to move and be ready in the new location by the following Monday. Just what effect this will have upon the attendance at Des Moines can not be foretold at this writing. The attendance Friday and Saturday was in excess of a year ago, but not enough larger to indicate a largely increased crowd from out of the city. It is likely, therefore, that the crowds the second week will be greater than heretofore, the weather being favorable.

The refusal of the railroads to grant reduced rates has no doubt cut down the attendance; how much, no one can say. It does not seem likely that a difference of half a cent a mile will keep away very many who come to the fair for what may be learned. But the absence of the inducement of reduced rates will unquestionably reduce the attendance from the smaller towns. In view of their practice of giving reduced rates from Iowa points to outside cities, the refusal of the roads to do what may fairly be called their share in boosting the fair is rather churlish, to say the least.

There are more than 60,000 automobiles in Iowa. Not all of these were driven to the fair, but enough came to make the storing of them a real problem. They filled the streets on either side, they were parked in every available open space, and the number scattered through the tenting ground indicated the method many took to reach the fair comfortably. The fair management will find it necessary soon to either widen the streets sufficiently to park cars on either side, or devote considerable space somewhere for a regular auto park. Considering the number of cars on the ground, and the careless abandon displayed by those pedestrians who habitually walk one way and look another, one is astonished at the small number of accidents.

"Same old fair," say some of those who go every year. But there is always change, and the grounds have been improved this year by the addition of the new cement walks and the tearing down of some of the old eating shacks to make a fine open space in front of the Administration Building, and one of the bands was stationed here and gave a concert every day.

At the Agricultural College exhibit, back on the hill, across from the Exposition Building, is always something new. What about self-feeders for hogs? Here is a practical home-made self-feeder, and beside it are figures telling how in an experiment hogs that were hand fed gained one and one-third pounds daily, while those fed with a self-feeder gained nearly one and one-half pounds, and the cost of 100 pounds of gain on the hand-fed hogs was $5.30, while on the self-fed hogs it was only $5.04. Which gives the best results when fed to lambs, ear corn, shelled corn, or corn meal? The exhibit in the Agricultural College building tells. Does it pay to feed cottonseed meal to steers which are getting a ration of corn silage, clover and corn? The chart in the Agricultural College building gives the results of an experiment in which it was found that the addition of cottonseed meal increased the gain by one-half pound daily, and reduced the cost of 100 pounds of gain by 60 cents. What are the best varieties of apples under Iowa conditions? A complete list of varieties, not only for apples, but also for pears, cherries and other fruits are given. There are exhibits indicating the best way to get a stand of alfalfa. An acre treated with ten tons of manure yielded 2.5 tons, while with no treatment the yield was only 1.5 tons. What is the best variety of oats under Iowa conditions? Where is the best place to get seed corn? What is the best number of kernels to plant to the hill? Does it pay to drill? Answers are given to all these questions. Plans of farm buildings are ready for inspection. Suggestions are given as to the best trees to plant in the Iowa wood lot for posts and in the windbreak for protection. Last, but not least, there is a miniature of a model farm house and grounds. All of these things are deserving of study rather than a passing glance. There is food for the brain as well as for the eye. Most people make the mistake in going through too fast. They should stop and consider, and ask questions. Young men in charge of the exhibits know their business, and are glad to give any inquirer the benefit of what they know. The Agricultural College exhibit is worthy a thorough and repeated inspection. It seems that most people come to the fair to hear the noises and see the big sights. They like to be where a crowd is. They seem to fear they may overtax their brains if they stop long at any one exhibit. But they have no thought of danger to their eyes or to their ears. It is the eye, ear and tongue which receive exercise at the fair, rather than the brain.

There are more worth-while lectures at the fair this year than ever before. In the back part of the Agricultural College building, moving pictures are given, every morning and afternoon, on up-to-date poultry keeping. The domestic science ladies of the college lecture here every morning at 9:30 and every afternoon at 1:30, on some phase of cooking or care of the home. At 3:30 in the afternoon, the professors of the college give a hog cholera demonstration or a talk on some such subject as alfalfa, farm management in Iowa, or distribution of pure-bred seed.

There are thousands of reunions every year at the fair. Friends of long ago, who had moved to a distant corner of the state, remind us of their existence. It is pleasurable and worth while to meet once again with the old neighbors and learn how they prosper. The Wallaces' Farmer pavilion, in Newspaper Row, just north of the Exposition Building, is crowded with old and new friends. They come to renew their subscriptions or to tell of crop conditions, or for a general chat. Disappointment is voiced because of the absence of Uncle Henry. He landed at New York ten days ago, but is detained in the east.

Between the Agricultural Building and the Exposition Building is the Child Welfare Tent. Here is held the baby health contest, and in the afternoon lectures are given on subjects of special interest to women. Ninety-seven boys, one from practically every county in the state, came to the fair with their expenses paid. These boys were the winners in the prize essay contest. They sleep together in a big tent on the hill, just southeast of the Agricultural Building. Every morning they get up at five, so as to help take tickets from those who stayed on the ground over night. Most of the morning they have to themselves, but in the afternoon and evening they usher in the grandstand, and ten o'clock finds them thoroughly tired and ready to enjoy to the limit their seven hours of sleep.

The Iowa farmer can afford to come to the State Fair for the sole purpose of studying the exhibit of farm implements and machinery. In these days of scarce and high-priced help, the machine which will save human labor or which will make it more efficient is worth hunting for, and worth buying when found. It is not many years since the machinery section could be "done" in an hour or so. This year a full day, or more, was required to do it justice. The buildings devoted to this exhibit were filled to overflowing. The larger concerns had immense tents of their own, while in the open air there were acres on acres of the larger implements—tractors, silage machinery, threshing machines, plows, etc., etc. Any farmer who made a careful inspection of the machinery exhibit gathered up information worth a lot of money to him. Incidentally, this exhibit shows a steady increase in the manufacturing industry of Iowa.

The swine exhibit was not up to former years in numbers. The wide distribution of hog cholera was largely responsible for this. The fair authorities established a rule to the effect that only hogs which had been immunized thirty days before the fair would be admitted. Many intending exhibitors found difficulty in getting serum. When this condition developed, the rule was modified, but too late for some herds to be fitted. About 80 per cent of the hogs shown had been treated. Those who brought un-vaccinated hogs had an opportunity to have them vaccinated by the fair veterinarians at the cost of serum only. Instructors from the Agricultural College gave a series of lectures and demonstrations on vaccinating swine, in a tent adjoining the hog pavilion.

In the horse section there is plenty of quality, but in some divisions the numbers are not up to former years. Dairy cattle are out in force, but the beef cattle exhibit does not show very marked improvement except in the Angus classes, which are apparently stronger than last year. Interest in the stock show continues unabated. When anything is going forward in the arena, the seats in the stock pavilion are usually filled. The love for fine domestic animals, whether horses, cattle, or hogs, seems to be inborn in Iowa people, whether they live in the city or in the country, and to many the State Fair offers the only opportunity to feed this taste. We are not ready to say that the cultural influence of an exhibit of beautiful specimens of flesh and blood molded by the brain and hand of the breeder who has studied nature's laws of breeding is not fully as great as that of a fine art gallery of masterpieces of canvas and pigment.

The total attendance at the Iowa State Fair this year was about 280,000, and the total receipts about $190,000, making this the record-breaking year, although neither receipts nor attendance are much above last year. Tuesday was the big day, with an attendance of 66,265, the Monday crowd of 57,707 being next largest. The Iowa State Fair is a very good barometer of agricultural and business conditions in Iowa, and record-breaking crowds this year may be taken as authoritative notice that there is no decrease in the prosperity of the Iowa farmer. The attendance this year would have been still larger but for the dedication of the great dam across the Mississippi river at Keokuk, on Monday and Tuesday. Large numbers of people who would otherwise have attended the fair, attended these dedicatory exercises.

The character and magnitude of the exhibit of light harness and saddle horses and ponies was something of a stunner to those folks who have been predicting that the day of the pleasure horse is rapidly passing. These classes were mostly shown in an open-air ring behind the horse barns, and removed from the main lines of travel, but a good-sized crowd occupied the standing room at the ringside. The fact that there was an excellent display of horses of this class is sufficient evidence of a continuous demand for them at remunerative prices. The automobile as a means of getting about has largely displaced the driving horse in the cities, but there are plenty of people who find abiding pleasure in drawing the lines over a spanking team or throwing a leg over a gaited saddler, and for them there is no substitute. The pleasure horse occupies a position of vantage from which the auto can not permanently displace him.

"Please return this child to Wallaces' Farmer pavilion," read the tag attached to the dress of a seven-year-old belonging to one of the Farmer families. A very sensible precaution, and a very easy way to make sure that if the child should be separated from its parents, little time would be lost in finding it. One fine thing about the Iowa fair is that almost no harm is likely to come to children who may become separated from their parents. They find friends on every hand, and if there is anything about the child to indicate where it belongs, a dozen are ready to volunteer to see that it gets there safely and promptly.

The Farmer pavilion was a favorite meeting place for people from all over the state. Friends and old neighbors who had not seen each other for years, quite accidentally found themselves together here. Two old neighbors who twenty-five years ago lived near each other in a southwestern Iowa county, met in the Farmer pavilion, and after exchanging reports concerning their respective families, the one who had moved away said to the other:

"Well, I suppose there have been a good many changes in the old place in the last twenty-five years?"

"Changes!" replied the other. "I should say there have been changes! The land has all been fenced now, and if you want to get anywhere, you go by section lines, and not on top of the divides, as we used to. All that rough land has been broken up."

"What about the price of land? I suppose that has advanced some."

"If you don't think it has advanced, suppose you come back and try to buy some of it. Do you remember that rough quarter which you were offered for $9 an acre the summer before you left? Well, that quarter sold a year and a half ago for $75 an acre. The farm which you sold at $30 an acre would now easily sell for $135, and I doubt whether the owner would give you a pleasant look for an offer at that price."

Another subscriber who happened to overhear this conversation here broke in with the remark: "It beats all about the price of land. We have had it very dry in our county ever since the first of July, and I suppose our corn will make about a half a crop, taking the county over, but the price of land keeps going up, and more farms have changed hands during the past month or six weeks than at any time during the past year. There is less speculation in land, but more of it is being bought by the farmers in the neighborhood. If a man wants to sell out, he will find someone within two or three miles of him who will pay all the way from $150 to $200 an acre for land that ten years ago could be purchased for not to exceed $75 an acre, and some of it as low as $50. Our people seem to have gotten over the craze for land in new countries, and the farmer who has a boy old enough to start out for himself will help him buy right around in the home neighborhood."

"What about the demand for a better system of farm credits?" was the question we put to as many people as possible. "Does the farmer who needs to borrow some money to carry him through the season have any trouble in getting it at a reasonable rate?" The invariable answer was, "Not a bit. Any man who has a good reputation for industry, whether he has much money or not, can borrow whatever he may need for carrying on his work, at from seven to eight per cent."

"What about the rates on farm mortgages, and where does the money come from?"

"Five and five and one-half per cent. Some of it is insurance company money, handled by the local bankers, but a lot of it is home money. Any amount of farmers' money is being loaned to the neighbors on mortgages and for short time loans as well."

"Then there isn't any particular demand in your neighborhood for the government to work out some system which will enable the farmers to borrow money easier?"

"Never heard such a thing suggested in our neighborhood. We have all the money we need. In fact, sometimes I think it is too easy to borrow money because it has encouraged some of our people to speculate in outside land and schemes of one sort or another, where they have lost considerable."

In some of the counties south of the Rock Island, the corn crop was reported badly damaged by dry weather, but the lowest estimate made was half a crop, and if there are any farmers who feel discouraged, they did not come to the fair. From all of the northern part of the state, reports indicate a very heavy corn crop.

The folks who arranged to camp on the grounds had the easy time of it. On Monday, Tuesday and Wednesday the attendance was very large, so large that the transportation facilities were inadequate to handle the crowds, and it was a hard day's work to get to and from the grounds. People who tented on the grounds avoided all of this crowding and discomfort. They were able to inspect and study exhibits in which they were particularly interested in the morning, before the large crowds reached the grounds, and in the evening after they had thinned out. During the heat of the day, they could retire to their tents and rest in comfort. Many who came in automobiles brought their camp equipment with them, but those who did not had no difficulty to arrange for tents with the companies which make this a business.

The directors of the State Fair have shown such good judgment in most things, that their admission of nasty side shows is hard to understand. Most of these shows this year were of the rather innocuous sort—monstrosities of one sort and another, acrobatic stunts, trained animals, etc. One or two, however, were of the nastiest sort—and should have been kicked out without ceremony as soon as their real character became known. When protests were made to some of the fair officials, they were reported as saying that they had been assured the "show was all right," and it was not until the sheriff of Polk county appeared that their serious attention was secured. One of the directors was quoted as saying that he did not intend to put himself up as censor of shows. For many years the Iowa State Fair set a high standard in the matter of side shows. It grew and prospered during this period. Last year the standard was lowered, much to the disgust of decent people. The Iowa farmer—and without him the fair would not amount to anything—looking for wholesome amusement, does not want to be confronted, and does not want his boys and girls confronted, by foul-mouthed spielers suggesting the wickedness to be seen within the tent. The fair directors are responsible in this matter. Pleas of ignorance will not do. It is their business to know about these shows. They are the officers of a state institution, built up by state money. They are expected to provide an educational exposition, and a place for wholesome amusement. They have not been given license to debauch our young people. There is no excuse for a "midway" on the Iowa State Fair grounds; and before another year an issue should be made of this matter.

Our fondness for bigness and breaking records seems to be a western characteristic. "Do you think the fair is as big this year as last?" was a common question. It was certainly "big" enough to undertake to see to any purpose. The live stock exhibit in some departments was not as large as in previous years, but for educational purposes it was fully as large as is necessary. In most other departments there was a greater variety of exhibits than ever before.

The baby show was interesting, and to the extent that it stimulates more sensible care and more intelligent consideration of babies, it is valuable. If we are really to learn much, however, from work of this sort, the parents should be shown along with the babies. That would be a real step toward the study of eugenics.

How quickly we become accustomed to new things. The flying machine man made flights twice daily, and every afternoon a companion stepped from the machine into space and descended safely by parachute. This latter act being a new stunt, aroused a languid interest, but probably less than fifteen per cent of the people on the grounds condescended to watch the regular flights for more than a moment. We strive after the difficult and unusual, but once the thing is done, we lose interest. Pursuit is still better than possession.

Immense crowds attended the evening shows held in the live stock pavilion and before the grandstand. In the pavilion it was mostly a stock show, principally horses. Before the grandstand it consisted of various vaudeville stunts, and concluded with a brilliant display of fireworks. Both were excellent entertainment features, and so generously were they patronized that on the big nights those who relied on the street cars and trains for passage to the city consumed from an hour to an hour and a half in getting to town. This was annoying, but it was a good-humored crowd, and the number of accidents was astonishingly few.

A group in the Farmer pavilion fell to talking about labor-saving devices and conveniences about the house and barn. "I put in an electric lighting plant last fall," said one, "and it appears to me about the best improvement I ever made. I have electric lights in the house and barn. No more fussing with smoky and dangerous kerosene lamps and lanterns. Simply push a button and we have a fine, clean light. I store my batteries with the same gasoline engine I use for light power work."

"I grow a lot of corn, and last year I bought a portable elevator. I have been feeling sorry for myself ever since to think of the hours and days and months I unloaded corn and oats with a scoop shovel," said another.

"I think about the best improvement I have made," said a third, "was to put in a lot of concrete walk. I made a concrete floor for the back porch, with concrete steps and a concrete apron eight feet wide, just off the porch. Then I ran a two-foot concrete walk to the barn, and around that to the cow stable and hog pen. It keeps us out of the mud, and I think the women folks appreciate it even more than I do."

Whereupon a fourth remarked: "What good sense we would show if more of us would do these things. The man who owns and lives on an Iowa farm ought to settle down and regard it as his permanent home, and improve it as a home in which he expects to live until carried out. A few hundred dollars each year spent for conveniences and permanent improvements will make the difference between real living and mere existence. Better houses, better furnishings, walks, lights, labor-saving machinery, and we will hear less of this talk about the boys leaving the farm."

To which all present promptly agreed.

THE STOCK SHOW.

The show in the live stock pavilion began promptly Friday morning, with the Shetland ponies and mules. Friday was Children's Day, and there were in the neighborhood of 10,000 youngsters under fifteen years of age scattered over the grounds. The live stock pavilion was a popular place with these little folks when the little horses were being put through their paces. There was a number of right fancy Shetlands on exhibition, the principal exhibitors being George A. Heyl, of Washington, Ill.; B. R. Welty, Nevada, Iowa; Mrs. A. Stirling, Des Moines, Iowa; John Donohoe, Story City, Iowa; W. C. Roberts & Sons, Ames, Iowa; Miss Frances Culbertson, Panora, Iowa; H. C. Davis, Ames, Iowa. Premiums were fairly well distributed, Mr. Heyl, however, having the largest exhibit, and securing more ribons than any other single exhibitor.

THE SHORT-HORNS.

Iowa furnished the bulk of the Short-horn exhibit. One animal came from Indiana, one from Illinois, nine from Minnesota, and thirty from Wisconsin. Ohio, Kentucky, and Illinois herds, which have won many prizes at previous fairs, had taken their herds to the eastern circuit, or else were not showing this year. It has been many years since the Iowa Fair has seen a weaker Short-horn exhibit. The show opened Saturday afternoon with three entries in the aged bull class. The two-year-old bulls were better, both in numbers and quality. At the top were two excellent roans, Sultan Mine, owned by Carpenter & Carpenter, Baraboo, Wisconsin, and Silver Sultan, owned by Burge. Both the yearling bull classes were lacking in numbers and quality. The senior calves, with twenty-one entries, furnished the banner class of the Short-horn exhibit. Saunders came to the top with two mellow roans. Cumberland's Type, a calf of great scale, and one filling the eye in almost every way, was given first. He was easily made junior champion later in the day. Gloster Fashion, the two-year-old bull from the Anoka Farms, took senior championship without much opposition, and later was made grand champion bull over the Saunders calf.

The aged cow classes were decidedly weak, but the yearling and calf classes presented excellent quality. The junior yearlings were in most respects the outstanding class of the Short-horn exhibit. Village Flower 2d, a beautiful white heifer, was outstanding. Low down, broad and smooth, she filled the eye in every respect. Senior calves were uniformly good, not running out in quality until well toward the end of the line. The Anoka Farms again took first, but were pushed close by Burge's excellent roan. In the female championships, the Anoka Farms had everything their way. Maxwelton Missie 2d, the two-year-old heifer, won the senior championship easily, and among the yearlings and calves, the white heifer, Village Flower 2d, had it all her way. She was made grand champion female over the two-year-old.

The group classes are the best test of a breeder's ability, especially in the get of sire and produce of cow classes. We were particularly interested in the get of sire class. Here the competition was keen between the get of Avondale, Villager and Cumberland's Best. The four roans, sired by Avondale, were of very similar quality; they were all unusually broad across the loins. Carpenter & Carpenter are to be congratulated on the splendid showing in the get of sire and produce of dam classes. Four hundred dollars in premiums were offered for the dairy Short-horns. Unfortunately there was but one exhibit. Iowa is a great field for the dairy Short-horn, and it is to be hoped that next year there will be a large number of entries.

THE ABERDEEN ANGUS.

The Angus exhibit was a distinct improvement over that of last year. Several new herds were out, and one of the strong exhibitors who last year was in Canada, again appeared at the Iowa fair. The five aged bulls were so good that last year's grand champion was forced down to third place. McHenry's Erwin C. easily stood first, with great size, smoothness and depth. The two-year-old bulls were so uniformly good that almost any placing might have been accepted. The senior calves were a splendid lot. Among the twelve entries, the Binnie and Caldwell calves were outstanding. Many thought that the Binnie calf was enough larger and wider in the quarter to justify placing him over the Caldwell entry, although this calf was undeniably smoother over the shoulder and larger in the heart-girth.

The Angus female classes were good throughout. There was keen competition among the aged cows. Between Blackcap McHenry 88th, last year's grand champion, and Battles' Thickset Myra, there was little choice. Some thought that the Battles entry might have been given first. Among the eight good junior yearlings, Battles had an outstanding heifer in Black Favorite of Rosemere. The Escher entry standing second, was of excellent quality, but lacked width and scale. Among the seven unusually good junior calves, Escher secured first with a stylish, but small heifer with a trace of brown in her coloring. The Anderson entry, standing second, was a week younger than the Escher calf, but carried much more weight and nearly as much quality. In the bull championships, McHenry had everything his way with Erwin C., who easily won the senior championship over Prince Felzer, the Escher two-year-old, and the grand championship over Ebony of A., Caldwell's junior champion. As he is showing this year, Erwin C. must be looked upon as one of the grandest types of Angus bulls ever seen at the Iowa Fair.

THE HEREFORDS.

The Hereford exhibit was excellent, although hardly up to the high standard of last year. Several strong herds which have hitherto helped to make things interesting were absent. It was pleasing to notice that Iowa exhibitors were more prominent than usual. There was excellent quality among the five aged bulls, with Cudahy's Fairfax 16th, last year's grand champion, an outstanding winner. The two-year-olds were not unusual, either in quality or numbers. Among the senior yearlings, Harris' Repeater 7th, a wonderfully blocky and low set calf stood first. Among the eight junior yearlings was very close competition, and it was especially pleasing to the Iowa ringside contingent when Tow secured first with Fairview Prince, a most excellent calf, broad, compact, and filling well over the shoulders. The senior calves were the best class of the Hereford exhibit. The thirteen entries were uniformly good, but the Curtice calf, Donald Perfect, had most finish and was a little the widest. It was no surprise that Fairfax 16th, last year's grand champion bull, should again become senior champion. He is a bull of great bulk but carries his weight smoothly. It was a surprise when Harris' senior yearling, after being made junior champion, was given the grand championship over the old bull.

The heifer calf classes presented some beauties of uniform excellence. Professor Kinzer worked hard picking out the winners, and while his judgment may in some cases be reversed at future fairs, he gave good satisfaction on the whole. In the get of sire and produce of dam classes, McCray and Harris divided the best prizes on stuff carrying Perfection Fairfax, Princess and Repeater blood.

GALLOWAYS.

The exhibitors were Capital View Ranch, Silver Lake, Kansas; S. M. Croft & Sons, Bluff City, Kansas; C. S. Hechtner, Chariton, Iowa.

POLLED DURHAMS.

Indiana, Illinois and Kansas sent exhibits in the Polled Durham classes, the exhibitors being J. H. Miller, of Peru, Indiana; Leemon Stock Farm, Hoopeston, Illinois; and Auchenbach Bros., Washington, Kansas. In the aged bull class Miller had the only entry; in the two-year-old bull class Auchenbach Bros. had things their own way, and in the senior yearling bull class, Leemon.

RED POLLS.

As in the case of the Polled Durhams, there were no Iowa exhibitors of Red Polls. Three herds were shown by Hausler Bros., Holbrook, Nebraska; W. S. Hill, Alexandria, South Dakota; and J. W. Larrabee, Earlville, Illinois. In some of the classes the competition was quite keen, and the premiums were quite well distributed between the three. In the aged bull class Hausler Bros. took first, Larrabee second, Hill third; two-year-old bull, Larrabee had the only entry; senior yearling bull, Hill had the only entry.

THE DAIRY CATTLE.

The dairy cattle are making a steady improvement year by year. It is especially gratifying to see the increase in the number of Iowa entries. There are more entries, however, from outside the state than in the state. The Holstein and Guernsey exhibits were unusually good. The Jersey entries all came from outside the state, and the show was scarcely up to standard either in numbers or quality. Ayrshires, Brown Swiss, and Dutch Belted gave variety. From the spectator's point of view, these breeds are of much interest.

HOLSTEINS.

Iowa breeders were out with a beautiful lot of Holsteins, and in practically all the classes competition was keen. The showing of younger stuff was especially gratifying.

GUERNSEYS.

While in a number of breed exhibits, breeders from other states carried away more of the ribbons than we like to see taken, in the Guernsey classes Iowa herds were out in force and captured most of the desirable ribbons.

JERSEYS.

Although there were five herds which sent representatives into the show ring, the Jersey exhibit was not up to what it has been at some former fairs.

AYRSHIRES.

Two herds of Ayrshires competed for the ribbons. The strong show herd of Adam Seitz, Waukesha, Wis., carried off the lion's share of the prizes. The entries of Wm. Galloway, Waterloo, Iowa, furnished good competition in several of the classes.

THE FAT STOCK.

The Iowa Fair comes too early to bring out a large exhibit of fat stock, but it furnishes an opportunity for feeders to try out some of the competitors whom they will meet later on in the fat stock shows proper, and this year there was a very creditable exhibit.

THE HORSE SHOW.

In a few classes, the horse show did not measure up to last year. But the total number on exhibition will not fall far below that of former years. A pleasing feature of the show was the large number of small breeders in evidence, and some of their productions were awarded first place in strong rings, containing good imported horses. This should tend to encourage the American breeder, and should help in convincing him that he can produce the best horses on our own soil. The two-year-old stallion, Matador, of the Percheron class, was bred and raised on an Iowa farm, and had the drafty form and qualities to defeat a good stallion that won second prize in the Paris show this year, and the two-year-old class of Percherons made the strongest show for the breed. Imported and American bred Shires made up the show, and many fine specimens of the breed were on exhibition. All stallion classes were well filled. The futurity colt show brought out a large number of foals in this breed and others. American breeders made the Clydesdale show, and while it was short in numbers, it was strong on type and finish. The Clydesdale breeders adhere more closely to traditional form and quality of leg than do some of the other draft breeds, and are quite exacting in their demands. Alex Galbraith placed the awards. The Belgians made a good showing, not great in numbers, but nearly all the classes contained only horses of the modern type. They had the quality and finish, and exceeded some of the other draft breeds in substance and weight. That the Belgian horse is growing in favor among American farmers can not be questioned.

NATIONAL PERCHERON FUTURITIES.

Secretary Dinsmore writes: "The most sensational show of Percherons that has ever been made in the United States, all things considered, was uncovered when the futurities were shown. Seventeen yearling stallions answered the call, and in all-around excellence, quality and finish, far excelled any previous show. The classes were judged by Wm. Bell, of Wooster, Ohio, and E. B. White, of Leesburg, Va., and ringside talent agreed that the judging was exceptionally well done. The rating of the stallions was as follows: First, Ethelwold Farms, Mondovi, Wis., on Principal; 2, W. S. Corsa, White Hall, Ill., on Carlothson; 3, Corsa, on Carvotte; 3, H. G. McMillan & Sons, Rock Rapids, Iowa, on Marshall; 5, F. M. Shaw, Oneida, Ill., on Combino; 6, R. J. Wallace & Son, Ladoga, Iowa, on Belmonte; 7, Crawford & Griffin, Newton, Iowa, on Reuben; 8, Corsa, on Carmerica; 9, C. B. Dannen & Sons, Melbourne, Iowa, on Mamers; 10, McMillan & Sons, on Intrar; 11, Seward Bros., New Providence, Iowa, on Mignon; 12, McMillan & Sons, on Surety. The seventh prize stallion was sold for $1,000, at the show.

"Percheron breeders expected something out of the ordinary in the filly classes, and were not disappointed. Thirty-three beautiful types of the breed appeared in the ring, and all but three were American bred. The imported fillies were good representatives of the breed, and by noted show horses, one being by Imprecation, the horse that won the championship of the breed at the International in 1911 and in 1912. Another one was by Intitule, the second best aged horse in the 1912 International. After exhaustive consideration of the classes, the judges sorted out twenty of the best and sent the rest to the barns, and it was found on checking up the list after this had been done that every filly left in the ring was American bred, and that most of them had been put forward by relatively small breeders. The first place fell to one of the most remarkable fillies ever exhibited in American show rings, and numerous experienced horsemen freely expressed the opinion that she was the equal of any mare ever shown in the United States. The fact that the Iowa State Fair is becoming more and more a breeders' show was emphasized by the winning of this filly, for she was bred by John Buswell, of Bradford, Ill., a small farmer breeder who has not to exceed fifteen or sixteen Percherons, all of them descendants of one pair of mares which he bought some years ago. Second, third, fourth, fifth and sixth fell to W. S. Corsa, White Hall, Ill., on colts sired by the champion Carnot. All of these were remarkably uniform in type and quality. The high estimate which breeders generally placed on the winning filly was forcibly illustrated in the afternoon, when Mr. Buswell, after refusing an offer of $1,500 for the filly in question, finally sold her for $2,000 to Selma Farm, Leesburg, Va. This is the highest price that has ever been paid for a yearling filly of any breed, and indicates the strength of prices for the best. The detailed list of the winning fillies is as follows: First, John A. Buswell, Bradford, Ill., on Couceorous; 2, 3, 4, 5 and 6, W. S. Corsa, White Hall, Ill., on Carnoress, Carnorine, Carnona, Carneito and Carnette; 7, H. G. McMillan & Sons, Rock Rapids, Iowa, on Elsine; 8, Iowa State College, Ames, Iowa, on Victoria; 9, J. T. Judge, Carroll, Iowa, on Carnot's Maid; 10, Geo. Baker, Newton, Iowa, on Mignonne; 11, C. B. Grimes, Winnebago, Minn., on Valrosa; 12, C. B. Dannen & Sons, Melbourne, Iowa, on Goldy.

"Breeders generally are agreed that no one thing has done so much to bring about rapid improvement in the breeding and development of high-class Percherons as the futurity stakes, and it is particularly worthy of note that the small breeders who use their mares regularly in farm operations are rapidly coming to the front. The influence of the futurity stakes is also evidenced in the increased strength of the foal classes, which were better than ever before.

"The Eastern Percheron Breeders' Futurity will be held at the Ohio State Fair, and as the eastern and western winners will meet at the International Percheron Breeders' Futurity the first week in December, a remarkable show may safely be looked for."

THE HOG SHOW.

The showing of Chester Whites, Large Yorkshires, and Tamworths, was begun on Saturday, and they are the only breeds on which the awards were completed by the time the forms were closed before going to press this week. The Chester White show was about equal in numbers to the good showing that was made last year, and this breed came nearer being up to the standard of former years than the other principal breeds. As was expected, the hog show falls far short numerically of some high records of former years, the cause being due to the wide prevalence of hog cholera, and to the ruling of the State Veterinary Health Board, which required all hogs to be vaccinated before they could be shown at any fair in the state. This order was later rescinded, but not in time to greatly increase the size of the show.

POULTRY.

The poultry department at the State Fair was as usual a center of interest for farmers, and almost as much so for the townsmen. The uniform cooping which the authorities provide makes a very attractive exhibit, and this year the dust was kept down by the use of bark—a condition which the breeders of white varieties especially appreciated. The judging was finished and ribbons up by Monday, thus giving the exhibitors the benefit of four days of advertising their winnings. It appeared to us that it might as well have been finished on Saturday, and avoid the Sunday judging, which was made necessary when the judges were not allowed to begin till Saturday morning. It is not fair to the judges to be asked to work on Sunday; and we are quite sure that Sunday judging is objectionable to both Judges Russell and Shellabarger. The birds were admitted Thursday, and were required to be in place by nine o'clock Friday. As well as the modern fair and show is systematized, there is no reason why three hours later, or noon of Friday, should not find everything in shape for the judges, and give them their Sabbath.

The offer of two silver cups in each class, to be offered as sweepstakes, brought out an unusually good class of young stuff; pullets and cockerels winning sweepstakes were almost fully matured. Buff Orpingtons were a better class than last year. A gentleman viewing them said: "Some years it is hard to get a good Buff inside the ribbons; this year there are many good ones outside the ribbons." The sweepstakes cockerel as the best cockerel in the show room went to a White Orpington—a magnificent bird well worthy the honor. Barred Rocks were a strong class, but the sweepstakes for cockerel in the American class went to a White Rock. The Cochins were a small class. Comparatively few fowls of any breed were shown, owing to the condition of plumage. Turkeys were good; but the extreme heat made it impossible to see these birds at their best. Eight or nine days of confinement for these naturally wild birds is a great tax on them. We think the breeders of fine turkeys would be justified in refusing to show. Even the first money of $3 would scarcely pay for the express, to say nothing of the possible loss in vitality.

Ducks and geese also suffered, but apparently not to the same extent. The little Leghorns made the most sprightly appearance, their size enabling them to put up with the warm weather better. The class in White Leghorns was unusually strong in quality; as also in White Wyandotte young stuff.

The birds in the egg-laying contest conducted themselves nobly—first and second prizes going to White Leghorns—the first with a record of 22 eggs, the second with 20, third, 19 eggs (Rhode Island Reds), and fourth, 14 eggs (Silver Campines.) The contest lasted five days. There were eight pens and six birds in a pen.

THE SHEEP.

The showing of sheep this year was not as large as the importance of the industry calls for, although some excellent flocks were exhibited. There should be more effort made to bring sheep to the attention of fairgoers. More sheep are needed in Iowa, and the State Fair offers an educational opportunity which should be more fully utilized than it ever has been. If the sheep department could be moved nearer the beaten path of the crowds, it should be done. As it is now, the man who is not looking for the sheep exhibit is not very likely to find it. One may spend a week on the grounds and not see a sheep. Iowa needs more sheep. They should take the place of some of our hogs. The sheep industry could be greatly stimulated by giving sheep exhibitors a better opportunity to bring their flocks to the attention of the fair-going farmers.

THE BABY SHOW.

Standing room was at a premium about the open-sided tent in which the baby judging was done. To Mrs. Mary T. Watts, of Audubon, Iowa, belongs the credit for this feature, which was instituted in 1911. Premiums were offered for the most perfectly developed babies from cities, towns and country. The babies were weighed, measured, and scored according to a regular scale of points.

BOYS' JUDGING CONTEST.

Four scholarships in any of the regular courses of agriculture at the Iowa State College of Agriculture and Mechanic Arts, at Ames, valued at $200, $150, $125 and $100, respectively, and one scholarship for a short course at the same college, valued at $25, were awarded to the boys who did the most efficient work in judging classes of horses, cattle, swine and samples of corn, assigned for the purpose, and writing reasons substantiating their judgment. Any boy living in the state of Iowa, under 21 years of age, who had never been regularly classified in any college, or had not won a place above fifth position in any previous Iowa State Fair contest, was permitted to compete, this restriction in no way applying to those who had attended only two-week short courses. There were 105 entries and the best five were as follows:

1. Harry H. Meneough, Grimes, Iowa.
2. Vernon Guthrie, Newton, Iowa.
3. Harry H. Webster, Runnells, Iowa.
4. J. Leo Ahart, Dow City, Iowa.
5. Raymond Teachout, Imogene, Iowa.

Farmer and Breeder, Sioux City.

The fifty-ninth annual Iowa State Fair closed on Thursday night, August 28. Everything considered, it was without question the greatest fair that has ever been held in Iowa. The weather was propitious, the roads ideal. The attendance might have been larger had railroad rates been reduced, but in spite of regular rates prevailing the attendance was 5,000 more than last year. Very few complimentary tickets were issued, and this increased the paid admissions by 17,000. Thus with considerably higher gate receipts and with a greater revenue received from concessions, the management took in several thousand dollars more than a year ago. The net profit from this year's show was between $30,000 and $35,000. From a financial standpoint the fair was an outstanding success.

The various amusement features were relatively clean, and the management kept a careful watch over all concessionaires to prevent overcharging and petty grafts. In some respects, however, the management did not seem to have its force well organized. The exhibitors of live stock were not given the attention they deserved, and in several instances the live stock judging was allowed to lag. Had a little more energy and snap been put into getting the various classes into the judging ring with more promptness, exhibitors as well as visitors would have felt better satised.

As we viewed the various exhibits on the fair grounds this year and compared them with those of a decade ago, for example, we became greatly impressed with the changes that have been wrought in every department, how the exhibits have grown in size and quality, and how certain things have gradually dropped out and others taken their place. Ten years ago automobiles were a curiosity; today it is a problem for the fair management to find storage room for the great number of expensive and efficient machines in which the farmers come with their families to view the big fair in comfort. Farm tractors are now so numerous that it is almost impossible to become acquainted with all the different makes on exhibition. There are the large outfits for the extensive farmer and the medium to small ones suitable for section and even quarter-section farms, each manufacturer claiming points of superiority in his outfit over those of his competitors. Similar changes are seen in all lines of machinery. Grain drills, corn planters, plows, cultivators, harrows and discs as we knew them a decade ago are no longer to be found, their places having been taken by improved types. The gasoline engine has displaced the once popular windmill. Modern farm gates and woven wire fencing, of which we knew nothing a few years ago, now occupy an important section among the ever-growing machinery exhibit. On every hand one sees evidences of improvement.

Nothing along this line made a greater impression upon us, however, than the silo exhibits. No less than seventeen different silos were on the ground where but a few years ago none was to be found. Wood silos predominated, but cement staves and clay tile structures were also represented. A hundred salesmen, perhaps, were proclaiming the merits of silage and the great saving that can be effected by utilizing the entire corn crop instead of only 55 per cent of it. All told stories of the many sales made in the past few years, till one might almost think that every Iowa farm is now equipped with a tank for storing at least a part of the corn each year. Such, of course, is far from actual facts; nevertheless the imposing display and the well-directed arguments in favor of silage converted many a skeptic and undoubtedly the next improvement on his farm will be a silo of some kind to enable him to make beef, mutton and dairy products at a lower cost and consequently with greater profits to himself. It is through the many impressive object lessons that the fair becomes such an effective agent in advancing agricultural development.

Not only was the fair as a whole educational, as it always is to the man who attends with a view of carefully studying the various exhibits, but this year there were so many special educational features that the great exhibition gave one the impression of a gigantic people's school in which the practical things pertaining to the farm and the farm home were expounded. The extension department of the Iowa State College took a very prominent part in this educational work. Daily lectures on hog cholera was one feature in which great interest was taken by farmers. These lectures were supplemented with demonstration work showing how the serum and virus should be injected and what precautions must be taken to prevent the spread of cholera from vaccinated herds. Iowa farmers lost fifteen million dollars worth of hogs last year from cholera and this year the disease is raging all over the state, till so far it has been impossible to manufacture the serum fast enough to supply the demand.

In the line of feeding the college had several interesting exhibits showing comparisons between the use of self-feeders for fattening hogs as compared with feeding by hand in the usual manner. Accompanying figures showed that the hogs fed from a self-feeder gained 1.5 pounds a day at a cost of $5.04 per cwt., while those that were hand-fed gained 1.3 pounds daily at a cost of $5.30 per cwt. Similar exhibits showed results of lamb feeding experiments for which shelled corn, ear-corn, and corn meal had been used. Steer feeding tests illustrating the use of cottonseed meal in connection with silage and clover hay showed that more rapid gains were made with the concentrate and that the cost of making gains was reduced 60 cents per cwt.

One very pleasing and instructive exhibit in the college building was a model farmstead showing windbreak, orchard, vegetable garden, yards, feed lots, barns, granary, silos, and other buildings. This model was not shown as an ideal, but rather as a suggestion of the desirability of paying more attention to formulating better plans for the arrangement of the farmstead with a view of securing not only greater convenience, but also more beauty. The college stands ready to send out a man to any farmer to help draw plans for arranging the farmstead better and for laying out the whole farm with a view of getting it arranged for systematic crop rotation. Much can be done in the way of planning the farm for lines of work for which it seems best adapted, and farmers should avail themselves of such help as the college stands ready to give without expense to the recipient.

The horticultural and agricultural displays were very similar to what has been shown in that line for the past ten years. Little, if any, improvement has been made in that period. To one who has seen the various varieties of fruit sitting around on plates for the past decade, a few bundles of grain grown especially for show purposes, there was little of interest to observe. The few individual farm displays, while pleasing to look at in a casual manner, carried with them no lesson of any value whatsoever. In fact, when one studies these exhibits for a few minutes one becomes disgusted with them, for they are so artificial that they mean absolutely nothing. What farmer could possibly grow ten varieties of corn, four or five varieties of wheat, half a dozen kinds of oats, and as many different varieties of barley and rye on one farm? It is absurd to think that so many different things could possibly be grown on one farm except for exhibition purposes, and grown in that manner they are of no practical value whatsoever. It would seem as though some plan might be devised to make the agricultural and horticultural exhibits more educational as well as more pleasing to the eye.

The Iowa fair, barring the Chicago International, has for years been acknowledged to be the greatest live stock exposition in the United States. This reputation will be maintained this year. In some of the breeds the classes were not so large as last year, but in no case was quality lacking. From the breeder's standpoint this year's show was the most satisfactory that has ever been held at Des Moines, because more home breeders were represented with stock of their own raising, while importers played a less important role. While we have no disposition to cast reflections upon imported stock, it is always easier to go to Europe with a full purse and pick out prize winners than it is to actually raise them, and this year's show, more than any previous exhibition at Des Moines, demonstrated the well known fact that we can raise as good stock at home as can be found in Europe. This is a fact greatly to the credit of our breeders and one that every farmer who desires to improve his stock should remember. The magic word "imported" is gradually losing much of its prestige, and it is well that it should, for, other things being equal, the animal that has been bred and raised at home is better adapted for the farmer in this country than the one that has been bred and raised across the water.

The Percheron show was a conspicuous example of what home breeders have been doing in recent years. Many small breeders were in evidence and they succeeded in getting away with a number of good prizes and that in competition with imported stock. We know of nothing that could offer greater encouragement to the American breeder to continue this important work of improvement. To create a superior horse, sheep, cow, or hog is as great an achievement as to create a superior work of art, and we believe it is of greater value to the human race. The aged and three-year-old classes were not quite so strong as they have been in former years, but the younger classes were above the average in quality and numbers. The first-prize two-year-old stallion Matador was bred in Iowa and won over an imported horse that took second prize in the Paris show this year. The Percheron show was generally considered one of the best ever made. It was a credit to the fair as well as to the ability of the American breeders. The Belgian show was stronger than last year, in fact it was by all odds the best show ever made by this breed in Iowa. The older mares and fillies made an especially fine appearance, being in good form and showing plenty of weight. While Shire and Clydesdale classes were not large, both breeds were represented by excellent specimens that made a most favorable impression in the show ring.

The draft colt futurity show, initiated by the Chicago Live Stock World some years ago, was one of the important features of the exposition. The interest manifested by the breeders as shown by the number of entries made and the crowded condition of the stock pavilion when the youngsters were judged, was proof sufficient that this feature will be permanently maintained at the Iowa fair, and, in fact, become a leading feature at all fairs throughout the country. In the Percheron futurities there were 19 stallions and 28 fillies to be judged, and they made the finest line-up of youngsters ever seen in the United States. The great lesson which this futurity show taught, a lesson well worth remembering, was that American breeders can produce as good draft stock, if not better, than can be produced in Europe. When the futurity show was first suggested many breeders doubted that anything could be done along that line in this country, first because it was thought that breeders would not fit their youngsters for such a show, and second because prize money would be difficult to raise in sufficient amounts to interest breeders. These conjectures have proved to be erroneous. The prizes this year aggregated $4,630, of which $700 was invested in eight silver trophies, while the remainder represented cash. The breeders, small as well as large, have never taken hold of anything in the show line with more enthusiasm than they have of these futurity exhibitions.

All four draft breeds were represented in the ring: the Percherons, as stated before, by 48 head, the Shires by 24, the Clydesdales by 10, and the Belgians by 6 head. As a whole the futurity show was the best that has ever been held in this country. In regard to the quality of the entries, it may be said that the first prize Percheron filly, owned by J. A. Buswell, was sold to Senator E. B. White, of Virginia, for $2,000. This was the highest price that has ever been paid for a yearling filly, either in France or in this country. A yearling stallion sold for $1,000, and several other sales were made at close to the latter price.

The Short-horns fell considerably behind in numbers as compared with last year. There were only three aged bulls, five two-year-olds, four senior yearlings, and seven junior yearlings to compete for honors and some of them were not in the best show condition. The calf classes were considerably better than the older classes, still they were not up to former standards. The Hereford show was fully up to any in former years; in fact, it was considered a very strong show, one indicating a rapid growth in popularity of the White Faces. Most of the classes were well filled and there was a marked absence of tail-enders. The J. P. Cudahy herd, consisting of 425 head, was sold to Warren T. McCray, of Kentland, Ind. While it was impossible to ascertain how much money the transaction involved, the chances are that the herd brought not far from $100,000, making the deal one of the largest of its kind in recent years. The Angus breed was well represented by some of the choicest specimens, all in excellent show conditions. The Doddies always give a good account of themselves wherever they go, and they did fully as well this year as last.

One of the notable features in the live stock show was the great increase in the dairy cattle on exhibition. All the dairy breeds made such a strong showing, particularly the Holsteins, as to excite much comment about the growth of the dairy industry in Iowa. As the price of Iowa land continues to advance, the special-purpose dairy cow is rapidly gaining in favor. She is not only capable of producing a fine calf every year, but also a large amount of milk and butter fat in addition. Judging from the interest that was manifested in the placing of the awards of these great cattle, it is evident that they are rapidly coming into favor among Iowa farmers.

The hog show was quite up to standard in quality, but not nearly so large as a year ago. The cause of this was cholera and the vaccination required by the fair management. Some exhibitors were not willing to vaccinate their hogs while others were unable to secure the necessary serum for vaccination. Several days before the fair opened the management sent out word that vaccination would be waived as an entry requirement, but it was then too late to be of much value. There is still a great deal of prejudice against vaccination with serum and still more against the use of both serum and virus. The difficulty seems to lie in getting reliable serum and perhaps also in getting it administered, especially so where the double treatment is employed.

Twentieth Century Farmer, Omaha.

Iowa's 1913 State Fair has set an advanced pace for this class of agricultural and live stock expositions. For many years Iowa has been conceded one of the most progressive fairs in the United States, and its present onward and upward tendency in exhibition interests and industry is only the evidence of the progressive spirit of its people. Iowa planned wisely and well in building the foundation for its State Fair. Its founders were unbiased in their effort to measure the future by the past and provide grounds and plans that would be in accord with the needs of generations yet unborn. Its spacious fair grounds, while ample for present needs, indicate that greater economic use of space must be practiced in future development.

EDUCATIONAL IDEA PREVAILS.

Iowa and Iowa's people are in sympathy with its fair. The educational idea prevails, and its exposition interests are closely coupled with its educational institutions and its educational forces. These are made a feature and a part of every department of this great exposition. The dean of the Agricultural College is a member of the State Board of Agriculture, and takes an active part in the fair management. The Agricultural College forces are thus brought into a close relationship to the State Fair. The Agricultural College exhibit is one of the very large and attractive displays. It has its special building, with every feature of rest and comfort, and invites tired fair visitors to spend a portion of their time in the investigation and study of what the state is doing for agriculture.

The most pronounced feature of the Iowa State Fair management is the tendency to direct every feature of display toward the moral and educational effect upon its patrons. The old-time questionable amusement features that were once thought proper for fair grounds are today refused a place for exhibition.

The improvement in system and arrangement of exhibits in all departments of this fair are very noticeable to the critical fair visitor, who looks upon each recurring exhibition for improvement. It is not an uncommon thing to hear this expression used, after some fair closes, when reference is made of "How was the fair this year?" "Oh, just the same old thing over again; no change."

REST FOR THE WEARY.

There have been great changes in the Iowa grounds in making the parked spots more attractive and pleasant for visitors. The new open court in front of the administration building deserves special mention. This is a large, shaded picnic or rest ground, amply provided with seats, where splendid concerts are given at stated hours throughout the day, just for the entertainment of the hundreds of persons who have stopped to rest, on comfortable seats, or on the grass, as thousands prefer as the quickest and easiest way to get rid of "that tired feeling," which most fair visitors experience after a few hours' travel over the fair grounds.

Exhibitors are taking a little more space in some departments, with a view to making a more attractive display, giving more demonstration room and furnishing more rest space for visitors. The encouragement to more attractive display has been enhanced by lengthening the exhibition period to eight days. This fair now commences with a complete program for Friday and Saturday instead of making these preparation days, as formerly. The judging starts in all departments, and a full and complete program is carried out. The fair visitor who arrives on the first or second day will be better entertained and have a better opportunity to see than if he had delayed until the crowd and jam of travel to the fair had commenced. These beginning days are sure to grow in popularity with the people, who are anxious to see the fair untrammeled by such obstacles as are met with where great crowds of people are congregated.

INDIVIDUAL FARM EXHIBITS.

One of the improvements made this year, and which is along the line of educational state fair progress, is the introduction of the individual farm collective exhibit. This classification takes the place of the county collective exhibit, a common feature of display with many state fairs, but one which carries no special educational influence with it. The collective exhibit is purely an exhibition of farm products, demonstrating the skill of the exhibitor or exhibitors. A few persons in each county have become expert exhibitors in this kind of a contest, and the display does not demonstrate any local condition of superiority more than that of exhibition skill. The individual farm exhibit shows to the fair visitor what is possible to produce on the farm by man's own efforts, and stimulates the ambition to try to measure up to the particular farm or man whose basis of production is the exhibit under inspection. The farm name is also an inspiration for the sight-seer to go home and name his farm and build his own monument by his farm's individual products and reputation.

There were nineteen individual farm collective exhibits this year. These nineteen exhibits were each occupying about eight by twelve feet shelf and wall space, making a nicely proportioned display. As variety and decorative feature of exhibits counted in the scoring, as well as quality of products, there was a neatness and beauty of arrangement in these displays that attracted attention and the favorable comment of sight-seers. The feature of general interest was the fact that this stuff had been produced on one farm, and the garden truck patch, grain field, meadow and orchard each contributed its share.

This display was based upon an outlay of $800, to be proportioned as premiums among the contestants according to the score each received from the awarding committee. The score for a complete exhibit was 100 points, and fifty was the score necessary to win a pro rata in the money offered. Thus all farms whose display scored fifty points or more were entitled to their pro rata of the $800, according to this score. Those articles that combine in making up the individual farm collective exhibit are not eligible to enter in the general classification of farm products in other divisions of the fair. It is the purpose of the fair management to add materially to this line of display by creating other classes of interest to the farmer upon similar basis of incentive.

AGRICULTURAL BUILDING CENTER OF INTEREST.

The agricultural building, which at present is used to house practically every feature of farm production outside of live stock, has become one of the great centers of interest on the State Fair Grounds. It provides space for the fruit display, both fresh fruits and canned fruits, pickles, preserves, etc. The fresh fruit exhibit was an improvement over former years, especially in quantity and variety exhibited.

The showcase plan of exhibit, the putting of as much as possible behind glass, where dust and dirt are excluded, and where the handling by anxious, inquisitive visitors is prevented, is being looked upon with great favor by the Iowa State Fair management. All fine textile exhibits, painted china, bread, cake, pickles, preserves, etc., are being provided with glass cases for exhibition. The threshed grain is exhibited under glass, in galvanized iron boxes, and thus kept free from dirt and handling. The arrangement of the exhibition tables and cases throughout this building accommodates large crowds and lessens congestion in crowded aisles.

POULTRY AND GAME EXHIBIT.

The poultry industry, especially the farm poultry, is receiving a great deal of careful study and experimentation in view of developing the highest practical condition for profit in poultry growing. The dressing of fowls for market and for economical home use, where the fowl was stripped from the bones, leaving its skeleton entirely bare of flesh and yet retaining the meat in one unbroken piece to roll up and bake or roast without the least particle of bone to contend with, was one of the features of poultry demonstration work that was taught each day at the poultry department. There were 2,100 fowls on exhibition, representing every breed and variety produced in this country.

The game exhibit at the Iowa State Fair is one of the very attractive and novel displays, and is interesting both to the farmer and the hunter. The State Board of Agriculture has set aside and properly fenced twenty-two acres of rough, hilly timber land on the southeast corner of the State Fair grounds for the propagation of game, especially quail and pheasant of the varieties best suited for stocking up the brush and timber districts. This enterprise becomes a part of the State Fair exhibit. Thousands of visitors travel to this remote corner of the grounds to see the foreign birds and novelties in breed and style of pheasant, quail, duck, goose, etc., that are kept within the confines of the twenty-two acres devoted to this purpose.

Many farmers have their applications in for a few of these birds in order to raise them on their own farms as insect destroyers. Fifteen hundred young birds have been raised this summer from this colony, and these will be distributed this fall over the state where there are brush and timber for their protection. As they multiply there will be seasons that the hunters will be permitted to slaughter them unmolested. Large cement basins, with running water, are built in the deep gulches and ravines to provide the water fowls with congenial surroundings.

THE BEEF CATTLE SHOW.

Beef cattle have been bringing high prices the last year. Many breeders had sold so low that they had not enough young stuff on hand to make a full show herd, and consequently stayed at home. Hot weather has made it bad to fit cattle, and an unusually backward, wet spring made a very busy set of farmers during the early summer. Consequently, there were many who did not show. Quality of exhibits was good in most cases.

Aberdeen-Angus put up the best show they have ever had. Classes ranged from ten to twenty entries each. Quality and fitting were superb. The herds of McHenry, Battles, Binnie, Miller and Escher vied for chief honors.

Herefords were not so numerous as usually. Des Moines generally gathers a goodly number of white faces in her arena, but not so this year. Cudahy's aged bull, Fairfax 16th, which went around the circuit undefeated last year, was set down for grand champion, and that honor was allotted to the extremely smooth Harris bull, Repeater 7th. This calf was sired by Repeater of show-yard fame several years back. He was first as senior yearling and junior champion.

Galloways were not so numerous as usual, either. Straub's strong herd from Nebraska was detained at home as a result of the season's tornado and drouth. Charles Escher judged the small number present in his customary capable manner.

Short-horns started extremely weak in aged classes, but there were large classes of younger animals and much excellent quality displayed. Sultan Mina was first in a class of three aged bulls and was later made grand champion. Saunders won first in senior calves on a double-bred Cumberland's Last. This chap was a roan of September birth and weighed 1,050 pounds. His immense scale, coupled with his goodness all over, made him an outstanding winner. He was later made junior champion and Iowa grand champion.

Female classes were larger than most bull classes. Harding and Saunders vied for chief honors here, and the former succeeded in getting the championship. Most breeders and feeders prefer the roan color. It is interesting to note the number of animals of each color in a large show such as Des Moines. For instance, in the majority of classes there were more roans than all the other colors put together. White has of recent years had the ban lifted from it in Short-horn circles, and some of the best winners are of this color. In fact, Harding's Village Flower, which won the grand championship after winning in the junior yearling class, was snow white.

PERCHERON HORSES.

The French draft horse has been transplanted, and now we must call him the American draft horse. At Des Moines we might even call him the Iowa draft horse, for Iowa exhibitors were certainly in evidence. The most gratifying feature of the show was the fact that the home grown colt could win from the imported one. The breeders who had grown their colts properly had them just as large for their age as the ones direct from France. Save for the undocked tails of those bred in the states, it would, indeed, be hard to discriminate between the two kinds as they appeared in their classes.

One often hears the objection raised to prize winning horses that they will never be heard from in the breeding herd. Many colts are undoubtedly crowded to such an extent as to impair their breeding qualities. However, just because a horse has been a champion at some big show is no indication that he will never become famous as a producer. The Percherons on display this year offered good evidence of this. A glance at the pedigrees of the prize winners would show in most instances that the sires have been show horses. For instance, of the first four Carnot colts shown in the various classes, ranging from mature horses down, there were two which won first, one which secured third and another fourth prize. These were won in large classes where the competition was keen. Likewise the produce of Calypso and other sires of equal showyard honors were consistent winners.

In aged stallions, Jeun, a Carnot colt owned by Fox of Genoa, Neb., secured the blue. He is a black of great breadth with ample bone, well set limbs and the best of feet. William Bell, of Ohio, who did the awarding, counted him as good a type as his sire.

In 3-year-olds Dunhams caught first and second on very large, heavy-boned colts which were but recently imported, while Nelson of Iowa secured third on a Carnot colt imported last year. He resembled his sire in being extremely blocky and heavily muscled.

In 2-year-olds there were eighteen entries. McMillan caught the blue on a Romeo colt named Matador, which won third a year ago in the futurity. Two Carnots were placed over him then and these were not exhibited this year. This colt carries a perfect top line, being short and strongly coupled. He might carry a trifle more length to his hind ankles, but he was easily the top of the classes shown.

Mare classes were large. Small exhibitors filled most of the classes. It looks good to see a farmer buy a team of pure bred mares, but it looks better to see him return to the fair several years later with a bunch of large, growthy colts from these mares.

SHIRE HORSES.

The English cart horse failed to make the showing made by the Belgians and Percherons. While quality was good, numbers were lacking, Alex Galbraith judged these, and his work was very good and well accepted. While he is a Clydesdale man, yet he adheres to the correct Shire pattern when judging Shires. He sought the long ankled horse with no tendency to side bones, and also gave quality of limbs considerable preference. Truman's farm made a large showing. Their 11-year-old mare, Tatton Aurora, proved to be quite a drawing card. She was a strong winner at British shows prior to her recent importation. Her English weight was recorded at 2,490 pounds, although she was scarcely over 2,400 pounds as she appeared at Des Moines. Even so, she is a veritable monster. Her width, depth and length are such as one seldom sees in a drafter of any breed. She came from the Boro-Fen farm of Mr. Griffin, which is on the Wash in eastern England, and on his low-lying meadows there grows a grass which produces Shires of immense scale.

BELGIAN HORSES.

Iowa farmers seem to like a horse with a good middle. They have found that this kind is always fat and ever in demand by the city horse-buyer. From the interest centered in the judging of the Belgian horses, one would infer that these possess characteristics which make them popular with the average farmer. Irrespective of faults, it must be admitted that of the large display of Belgians on hand, there were very few which lacked in depth of body. We would like them better if they carried their backs straighter and were not so meaty in their hocks, but as a breed they surely are splendid in heart and body girth. As among the Percherons, the bulk of the entries were from Iowa farms. In numbers, this breed exceeded any on the grounds. The largest class was the 2-year-old fillies. There were twenty-one led out for this. Prof. Kennedy judged quickly and satisfactorily. His speed received many comments from the ringside. The type of winner seemed quite consistent, he adhering to the qualities of ample scale and muscle.

The experienced horseman readily recognizes a Belgian by his type of body, head and legs and even by the shortly-docked tail. An amateur might be sadly deceived, however, were he to use color as a means of distinguishing a horse of this breed. A dark iron-gray colt shown in the yearling class looked much like a Percheron. Several coal-blacks were also to be seen. Likewise there were bays with white trimmings and these could almost be mistaken for the light feathered American bred Shires. The breed colors most in evidence were the blue and red roans, the sorrel, chestnut, bay and brown.

In the aged stallion class a blue roan of Lefebure's caught the blue ribbon. He was almost first and champion a year ago. The sensation of the show appeared in the red roan 3-year-old, Farceur, from the Crownover stables. He looked as near a perfect draft horse as the Belgian breed has ever produced. He shows a large amount of quality in limbs, his cannon bones being as clean and flat as a Clydesdale and his hind legs carrying that placement which makes him a powerful mover.

The growing popularity of this breed is ever noticeable. Their extreme massiveness, limbs free from excessive hair and disposition free from meanness make attributes which the average man appreciates.

FUTURITY CONTESTS.

Several years ago a futurity contest for yearling draft colts was inaugurated. Breeders enter their pure bred colts of both sexes when they are weanlings. The judging is done at the Iowa fair each fall when these colts are yearlings past. Prizes amounting to large sums, besides trophies, are given. The first prize in several breeds receives over $200. A committee of three does the awarding in each breed. These contests have worked wonders among American draft horse breeders. Such prizes give an incentive not only to breed the best, but to feed and care for them as well. This year there were many entries in each breed, and the contest was at a high pitch upon Tuesday while the judging was going on.

MORGAN HORSES.

The little historic Morgan may yet come into his own. The Iowa people persist in offering premiums for this once famous strain of light horses, and each year witnesses a goodly number of them on hand. This year there was a large display, there being twelve aged stallions, and the other classes were proportionately large. Needless to say, there was a wide variance in the types of the entries. In the mature stallions there were blocky little 1,100-pound individuals and there were rangy coachers weighing upwards of 1,400 pounds. Two years ago a Hackney breeder did the judging. He picked for action, irrespective of other qualifications aside from quality.

Last year George Rommell of the United States department of animal industry pinned the ribbons. His work in breeding Morgans at the Vermont experiment farm gave him a type to work for. The breeders were satisfied that he was adhering to what they called a correct type. This, in spite of the fact that he placed a stallion first in the aged class which the year before had won nothing, showing against the same horses. This year J. O. Williams, the government horse breeder at Fort Collins, Colo., did the judging. It is indeed a pleasure to say that he picked consistently for the same type that Mr. Rommell did. Pessimists who last year said there was no Morgan type because the judge did not pick the same each year, were compelled to withdraw their grievance. But few boys have been reared on the farm the last century who have not received an early appreciation of Morgan horses from some wiry little animal which their fathers proclaimed to be of Morgan stock.

MULE SHOW.

Missouri has always claimed chief honors in the breeding of hybrids. If one can judge by the exhibits of Iowa-raised donks at Des Moines there will be keen competition between the two states for this honor in the future. Just imagine a 7-year-old brown mare mule weighing 1,900 pounds! Another white mule weighing 1,650 pounds secured championship honors over all the grounds. This animal was pronounced the best mule ever displayed at Des Moines by the judge, W. A. Dobson. His legs were as clean and qualitated as those of a thoroughbred. His white hoofs stood squarely under him and in size compared favorably with those of a medium sized draft horse. Another extra good mule was an iron gray 18-months-old colt which weighed 1,150 pounds. He was framy, heavy-boned, large jointed and incidentally well eared. There were many others of merit of which Iowa might well be proud.

The stock show was almost entirely an Iowa affair. Very few exhibitors came from without the state and those that did found ample competition by the local people. It was surely commendable that so strong a showing could be made by Iowa-owned stock, and even more so when we consider that these animals were nearly all raised in the state. Years ago it was thought that America could not compete with Europe in producing draft horses. Today we see Iowa bred colts at the fair winning prize after prize from imported stock. The same holds true with cattle and sheep. The fair does well to offer special premiums for Iowa owned stock, as by so doing it adds incentive to the local man to come forth with his best.

Awards in Live Stock Departments, Iowa State Fair and Exposition, 1913.

HORSE DEPARTMENT.

SUPERINTENDENT.....................C. F. CURTISS, Ames.

PERCHERON.

EXHIBITORS.

Geo. Baker, Newton; T. B. Bowman & Sons, Boone, Nebraska; Jno. A. Buswell, Bradford, Illinois; J. Hill Barnes, Oskaloosa; Brown and Walker, Clarinda; W. S. Corsa, Whitehall, Illinois; Wm. Crownover, Hudson; Crawford & Griffin, Newton; C. B. Dannen & Sons, Melbourne; Dunhams, Wayne, Illinois; Loren Dunbar, Earlham; W. L. DeClow, Cedar Rapids; Ethelwold Farms, Mondovi, Wisconsin; Jacob K. Eshelman, Altoona; Geo. Eggert, Newton; W. S. Fox, Genoa, Nebraska; C. G. Good, Ogden; C. B. Grimes, Winnebago, Minnesota; E. N. Gates, Newton; C. F. Hartwig, Knierim; Luther Huston, Blandinsville, Illinois; Iowana Farms, Davenport; Iowa State College, Ames; Chas. Irvine, Ankeny; C. F. Jones, Rippey; J. T. Judge, Carroll; C. F. Kruger, Doon; Morris Bros., Stockport; H. G. McMillan & Sons, Rock Rapids, Iowa; M. J. Nelson, Cambridge; Rapp Bros., St. Edward, Nebraska; J. S. Risley, Ames; W. W. Seeley, Stuart; Frank M. Shaw, Oneida, Illinois; E. R. Shaw, Oneida, Illinois; Seward Bros., New Providence; Seward Bros. & Johnson & Son, New Providence; Truman's Pioneer Stud Farm, Bushnell, Illinois; John Vought, Hampton, Iowa; F. T. Williams, Pleasantville, Iowa; H. P. Wilkinson Bros., Mitchellville, Iowa; F. W. Weinrich, Geneseo, Illinois; R. J. Wallace & Son, Ladoga, Iowa.

AWARDS.

JUDGE..........................WM. BELL, Wooster, Ohio.

Stallion Four Years or Over—First, Jeun, 81359 (84638), W. S. Fox; second, Jorat (85748), Dunhams; third, Garvial 61373 (69712), Crawford & Griffin; fourth, Istroth, 64979 (79934), Geo. Baker; fifth, Interdit 69489 (799947), Crawford & Griffin; sixth, Bambin, 62717, J. Hill Barnes.

Stallion Over Three, Under Four—First, Koran (92007) Dunhams; second, Keramories (95346), Dunhams; third, Konsecutif, 88581 (91560), M. J. Nelson; fourth, Klamorgan, 95014 (96683), Truman's Pioneer Stud Farm; fifth, Katran, 95015 (91601) Truman's Pioneer Stud Farm; sixth, Kalifornien (90644), Dunhams.

Stallion Over Two, Under Three—First, Matador, 86310, H. G. McMillan & Sons; second, Legiste (10442), Dunhams; third, Lycaon (99976) Dunhams; fourth, Lillers (102195), Truman's Pioneer Stud Farm; fifth, Lombric, (104667), Truman's Pioneer Stud Farm.

Stallion Over One, Under Two—First, Principal, 89486, Ethelwold Farm; second, Carlotheon, 91137, W. S. Corsa; third, Carvotte, 96443, W. S. Corsa; fourth, Marshall, 96227, H. G. McMillan & Sons; fifth, Combino, 96104, Frank M. Shaw.

Stallion Foal—First, Bataclan, Jr., Jno. Vought; second, Spencer, Morris Bros.; third, Bonaparte, Morris Bros.; fourth, Electeur, 94779, C. B. Dannen & Sons; fifth, Major, C. B. Dannen & Sons.

Stallion Three Years or Over, Bred by Exhibitor—First, French Premier, 53995, W. W. Seeley; second, Calyps, 79632, T. B. Bowman & Sons.

Stallion Under Three, Bred by Exhibitor—First, Principal, 89486, Ethelwold Farms; second, Carlotheon, 91137, W. S. Corsa; third, Carvotte, 96443, W. S. Corsa.

Yeld Mare, Four Years or Over—First, Ilda (87642), Dunhams; second, Hemine, 90776 (78349), C. F. Jones; third, Elsie, 66218, H. G. McMillan & Sons; fourth, Huzzarde, 91975 (74137), Wm. Crownover; fifth, Francis Falcon, 97013, Crawford & Griffin.

Mare and Foal, Mare to Count 50%, Foal 50%—First, Jante and foal, 79487 (87190), W. S. Corsa; second, Luttee and foal, 61929 (68304), Iowana Farms; third, Carnation and foal, 63090, Jacob K. Eshelman; fourth, Harlette and foal 82333 (97015), C. B. Dannen & Sons.

Filly Over Three Under Four—First, Achsie 75884, H. G. McMillan & Sons; second, Kontrefacon (95819), Dunhams; third, Kouture, 88597 (91378), M. J. Nelson; fourth, Kaoline, 88582 (93020) M. J. Nelson; fifth, Comet, 72768, C. B. Dannen & Sons.

Filly Over Two, Under Three—First, Lyonnaise (102756), Dunhams; second, Elsetta 85534, H. G. McMillan & Sons; third, Loupe, 96541, Geo. Eggert; fourth, Tona, 87566, T. B. Bowman & Sons; fifth, Elder Lady, 86713, C. B. Dannen & Sons.

Filly Over One, Under Two—First, Couceorous, 94852, Jno. A. Buswell; second, Carnoress, 91032, W. S. Corsa; third, Carnorine, 96701, W. S. Corsa; fourth, Carnona, 91033, W. S. Corsa.

Mare Foal—First, Carnante, 94321, W. S. Corsa; second, George Baker; third, Jessie, Morris Bros.; fourth, Iowana Maid, 96428, Iowana Farms; fifth, Clunie, Morris Bros.

Mare Three Years or Over, Bred by Exhibitor—First, Elsie, 66218, H. G. McMillan & Sons; second, Comet, 72768, C. B. Dannen & Sons; third, Black Beauty, 79584, Luther Huston; fourth, Coevous, 76707, Jno. A. Buswell.

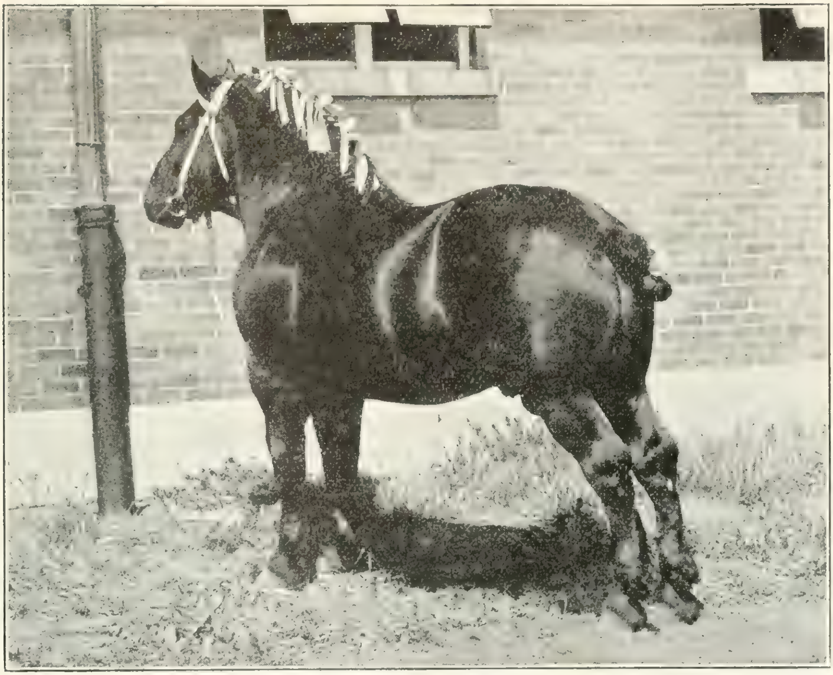
Mare Under Three Years, Bred by Exhibitor—First, Cauceorous, 94852, Jno. A. Buswell; second, Carnoress, 91032, W. S. Corsa; third, Elsetta, 85534, H. G. McMillan & Sons; fourth, Tona, 87566, T. B. Bowman & Sons.

Champion Stallion—First, Jeun, 81359 (84638), W. S. Fox; second, Matador, 86310, H. G. McMillan & Sons.

Champion Mare—First, Couceorous, 94852, Jno. A. Buswell; second, Ilda (87624), Dunhams.

Champion Stallion, Owned in Iowa—First, Matador, 86310, H. G. McMillan & Sons; second, Konsecutif, 88581, (91560), M. J. Nelson.

Champion Mare, Owned in Iowa—First, Achsie, 75884, H. G. McMillan & Sons; second, Kouture, 88597, (91378), M. J. Nelson.



Champion Percheron Stallion, Jeun, 1913 Iowa State Fair and Exposition, owned by W. S. Fox, Genoa, Nebr.

Get of Stallion—First, W. S. Corsa; second, Jno. A. Buswell; third, H. G. McMillan & Son; fourth, W. S. Corsa; fifth, C. B. Dannen & Sons.

Produce of Mare—First, J. A. Buswell; second, H. G. McMillan & Sons; third, Luther Huston; fourth, Jno. Vought; fifth, C. B. Dannen & Sons.

Grand Display—First, H. G. McMillan & Son; second, W. S. Corsa; third, C. B. Dannen & Son; fourth, T. B. Bowman & Sons.

Five Stallions Owned by Exhibitor—First, Dunhams; second, Truman's Pioneer Stud Farm.

SPECIAL PRIZES OFFERED BY THE PERCHERON SOCIETY OF AMERICA, 1913.

Stallion Three Years Old or Over, Bred and Owned by Exhibitor—First, French Premier, 53995, W. W. Seeley; second, Calyps, 79632, T. B. Bowman & Sons.

Stallion Under Three, Bred and Owned by Exhibitor—First, Principal, 89486, Ethelwold Farms, second, Carlotheon, 91137, W. S. Corsa; third, Carvotte, 96443, W. S. Corsa.

Champion Stallion, Bred and Owned by Exhibitor—First, Principal, 89486, Ethelwold Farms; second, Carlotheon, 91137, W. S. Corsa.

Mare Three Years or Over, Bred and Owned by Exhibitor—First, Elsie, 66218, H. G. McMillan & Sons; second, Comet, 72768, C. B. Dannen & Sons; third, Black Beauty, 79584, Luther Huston; fourth, Coevous, 76707, Jno. A. Buswell.

Mare Under Three, Bred and Owned by Exhibitor—First, Cauceorous, 94852, Jno. A. Buswell; second, Carnoress, 91032, W. S. Corsa; third, Elsetta, 85534, H. G. McMillan & Sons; fourth, Tona, 87566, T. B. Bowman & Sons.

Champion Mare, Bred and Owned by Exhibitor—First, Cauceorous, 94852, Jno. A. Buswell; second, Carnoress, 91032, W. S. Corsa.

Get of Stallion—First, W. S. Corsa; second, Jno. A. Buswell; third, H. G. McMillan & Sons; fourth, W. S. Corsa.

Produce of Mare—First, Jno. A. Buswell; second, H. G. McMillan; third, Luther Huston; fourth, Jno. Vought.

Champion Stud—First, H. G. McMillan & Sons; second, W. S. Corsa; third, C. B. Dannen & Son; fourth, T. B. Bowman & Sons.

Five Stallions, Owned by Exhibitor—First, Dunhams; second, Truman's Pioneer Stud Farm.

Champion Stallion, Open Class—First, Jeun, 81359 (84638), W. S. Fox; second, Matador, 86310, H. G. McMillan & Sons.

Champion Mare, Open Class—First, Couceorous, 94852, Jno. A. Buswell; second, Ilda, (87624), Dunhams.

NATIONAL PERCHERON BREEDERS' FUTURITY.

Opened and Guaranteed by the Chicago Daily Live Stock World.

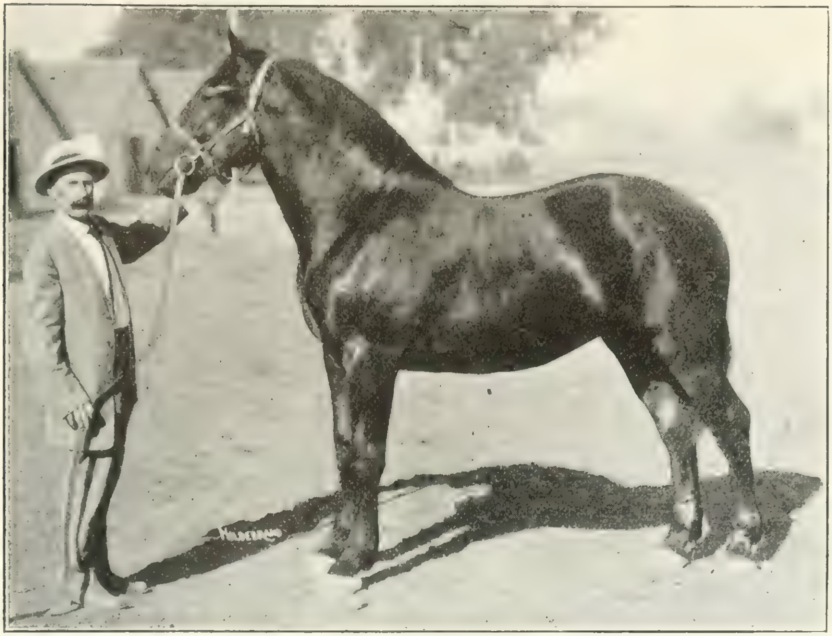
Stallions—First, Principal, 89486, Ethelwold Farms; second, Carlotheon, 91137, W. S. Corsa; third, Carvotte, 96443, W. S. Corsa; fourth, Marshall, 96227, H. G. McMillan & Sons; fifth, Combino, 96104, F. M. Shaw; sixth, Belmonte, 89127, R. J. Wallace & Son; seventh, Reuben, 88180, Crawford & Griffin; eighth, Carmerica, 94311, W. S. Corsa; ninth, Mamers, 95596, C. B. Dannen & Sons; tenth, Intrar, 97029, H. G. McMillan & Sons; eleventh, Mignon, 96909, Seward Bros.; twelfth, Surety, 88935, H. G. McMillan & Sons; thirteenth, Maple Lawn Garnet, 86462, E. N. Gates.

Fillies—First, Coucerorous, 94852, Jno. A. Buswell; second, Carnoress, 91032, W. S. Corsa; third, Carnorine, 96701, W. S. Corsa; fourth, Carnona, 91033, W. S. Corsa; fifth, Carneito, 91035; sixth, Carnette, 94315, W. S. Corsa; seventh, Elsine, 97025, H. G. McMillan & Sons; eighth, Victoria, 96349; Iowa State College; ninth, Carnot's Maid, 86282, J. T. Judge; tenth, Mignonne, 95426, Geo. Baker; eleventh, Valrosa, C. B. Grimes; twelfth, Goldy, 94731, C. B. Dannen & Sons; thirteenth, Bonifield, 94851, Jno. A. Buswell.

CLYDESDALES.

EXHIBITORS.

Bedminster Farms, Pottersville, N. J.; Ethelwold Farms, Mondovi, Wisconsin; H. Harris Ford, Storm Lake, Iowa; W. V. Hixon, Marengo, Iowa; W. L. Houser, Mondovi, Wisconsin; Iowa State College, Ames, Iowa; Hildebrand Bros., Gladbrook, Iowa; McLay Bros., Janesville, Wisconsin; James Pedley, Britt, Iowa; A. G. Soderberg, Osco, Illinois; W. W. Weston & Son, Audubon, Iowa.



Champion Percheron Futurity Filly, Couceorous, 1913 Iowa State Fair and Exposition, owned by John A. Buswell, Bradford, Ill.

AWARDS.

JUDGE.................E. A. TROWBRIDGE, Columbia, Missouri.

Stallion Four Years or Over—First, Prince Cedric, 16656, H. Harris Ford; second, Osco Sherman, 13796, A. G. Soderberg; third, Baron Lynedoch, 14940, W. V. Hixson; fourth, Reliance, 14938, W. V. Hixson; fifth, Forest King, 14076, Jas. Pedley.

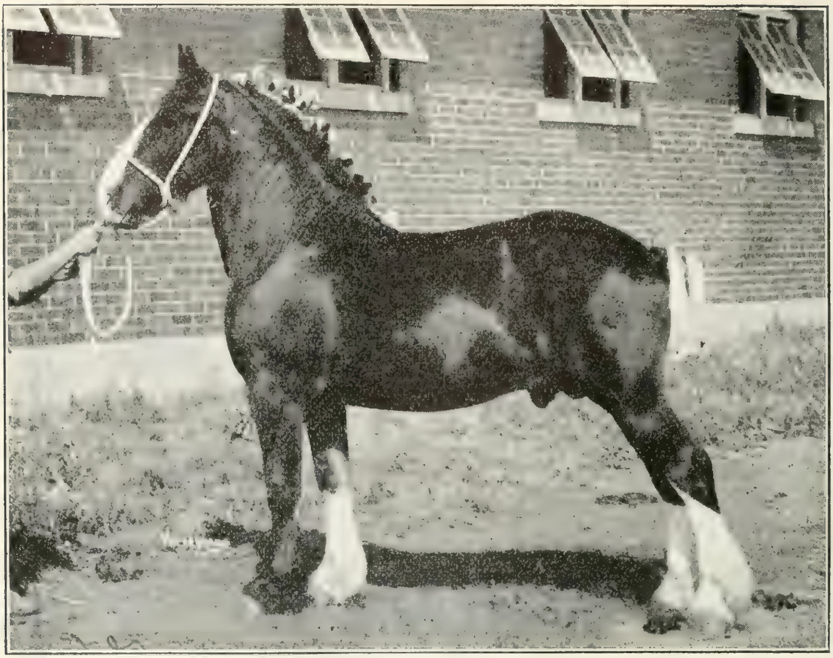
Stallion Over Three, Under Four—First, Baron Defiance, 15858, W. V. Hixson; second, Osco Pride, 15470, A. G. Soderberg; third, Osco Stuart, 15468, A. G. Soderberg; fourth, Russell, 16062.

Stallion Over Two, Under Three—First, Come Again, 16920; A. G. Soderberg; second, Baron Caliph, 16592, W. V. Hixson; third, King's Favorite, 16482, Jas. Pedley; fourth, Kenneth, 16597, W. V. Hixson; fifth, Osco Baron, A. G. Soderberg.

Stallion Over One, Under Two—First, Warren's Favorite, 17071, W. V. Hixson; second, Baron Ideal, 17171, H. Harris Ford; third, Baron Ruby, 16987, W. W. Weston & Son.

Stallion Foal—First, Prince O'Fashion, Ethelwold Farms; second, Prince Fearless, H. Harris Ford.

Stallion Three Years or Over, Bred by Exhibitor—First, Baron Defiance, 15858, W. V. Hixson; second, Osco Pride 15410, A. G. Soderberg; third, Baron Lynedoch, 14940, W. V. Hixson; fourth, Osco Stuart, 15468, A. G. Soderberg; fifth, Reliance, 14938, W. V. Hixson.



Champion Clydesdale Stallion, Come Again, 1913 Iowa State Fair and Exposition, owned by A. G. Soderberg, Osco, Ill.

Stallion Under Three, Bred by Exhibitor—First, Come Again, 16920, A. G. Soderberg; second, Baron Caliph, 16592, W. V. Hixson; third, King's Favorite, 16482, Jas. Pedley; fourth, Osco Baron, A. G. Soderberg.

Yeld Mare, Four Years or Over—First, Lady Palmerston, 13565, W. V. Hixson; second, Una, 16194, (25422), H. Harris Ford; third, Edith Warton, 13831, Jas. Pedley.

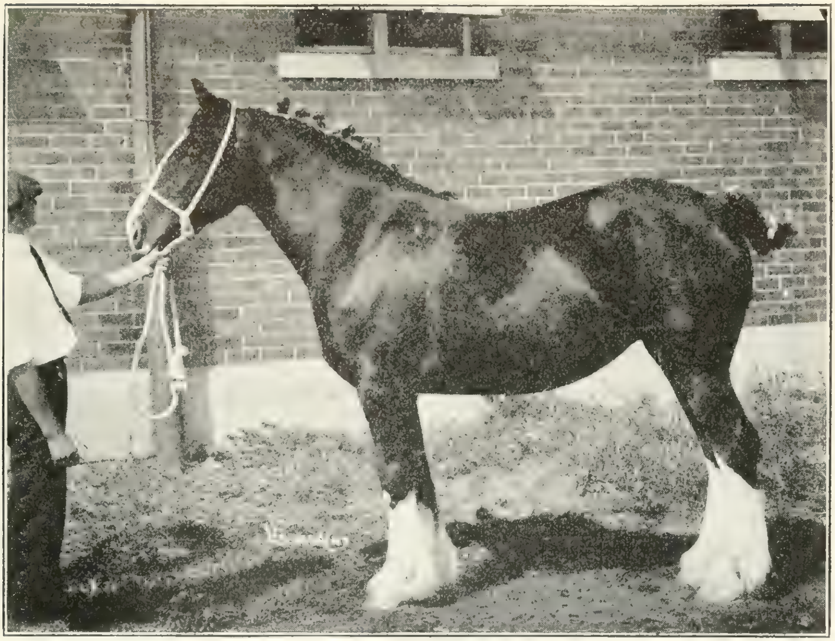
Mare and Foal, Mare to Count 50%, Foal 50%—First, Amaryllis and foal, 15873, Ethelwold Farms; second, Winsome Princess and foal, 15873, Ethelwold Farms; third, Floss and foal, 16780 (28931), H. Harris Ford; fourth, Dorothy Vernon and foal, 13610, W. W. Weston.

Filly Over Three, Under Four—First, Flossie, 15862, W. V. Hixson, second, Clifton Bell, 15530, W. V. Hixson; third, Osco Rose, 15464, A. G. Soderberg; fourth, May Queene, 15859, W. V. Hixson.

Filly Over Two, Under Three—First, Princess Mae, 16807, H. Harris Ford; second, Osco Bell, 16279, A. G. Soderberg; third, Mary Queen of Scots, 16921, A. G. Soderberg; fourth Lady Caliph, 16601, W. V. Hixson.

Filly Over One, Under Two—First, Osco Jem, 16922, A. G. Soderberg; second, Princess Quana, 16926, W. W. Weston & Son; third, Lady Favorite, 16926, W. V. Hixson; fourth, Lady Stewart, 17214, W. V. Hixson; fifth, Perfection, 16840, Ethelwold Farms.

Mare Foal—First, Winsome's Darling, A. G. Soderberg; second, Miss Dorothy, W. W. Weston & Son.



Champion Clydesdale Mare, Princess Mae, 1913 Iowa State Fair and Exposition, owned by H. Harris Ford, Storm Lake, Iowa.

Mare Three Years or Over, Bred by Exhibitor—First, Amaryllis, 15873, Ethelwold Farms; second, Flossie, 15862, W. V. Hixson; third, Lady Palmerston, 13565, W. V. Hixson; fourth, Clifton Bell, 15530, W. V. Hixson; fifth, Osco Rose, 15467, A. G. Soderberg.

Mare Under Three, Bred by Exhibitor—First, Princess Mae, 16807, H. Harris Ford; Second, Osco Jem, 16922, A. G. Soderberg; third, Osco Bell, 16279, A. G. Soderberg; fourth, Mary Queen of Scots, 16921, A. G. Soderberg; fifth, Lady Stewart, 17214, W. V. Hixson.

Champion Stallion—First, Come Again, 16920, A. G. Soderberg; second, Prince Cedric, 16656, H. Harris Ford.

Champion Mare—First, Princess Mae, 16807, H. Harris Ford; second, Amaryllis, 15873, Ethelwold Farms.

Champion Stallion, Owned in Iowa—First, Prince Cedric, 16656, H. Harris Ford; second, Warren's Favorite, 17071, Ethelwold Farms.

Champion Mare, Owned in Iowa—First, Princess Mae, 16807, H. Harris Ford; second, Flossie, 15862, W. V. Hixson.

Get of Stallion—First, A. G. Soderberg; second, W. V. Hixson; third, W. V. Hixson.

Produce of Mare—First, A. G. Soderberg; second, A. G. Soderberg; third, W. V. Hixson; fourth, W. V. Hixson.

Grand Display—First, A. G. Soderberg; second, W. V. Hixson; third, W. V. Hixson.

Five Stallions Owned by Exhibitor—First, A. G. Soderberg.

NATIONAL CLYDESDALE BREEDERS' FUTURITY.

Opened and Guaranteed by the Chicago Daily Live Stock World.

Stallions—First, Warren's Favorite, 17071, W. V. Hixson; second, Baron Ideal, 17171, H. Harris Ford; third, Baron Ruby, 16986, W. W. Weston & Son.

Fillies—First, Osco Gem, 16922, A. G. Soderberg; second, Princess Quana, 16987, W. W. Weston; third, Lady Favorite, 16926, W. V. Hixson; fourth, Lady Stewart, 17214, W. V. Hixson; fifth, Perfection, 16840, W. L. Houser; sixth, Heather Belle, 17223, Iowa State College; seventh, Winsome Bessie, 17369, W. W. Weston & Son.

ENGLISH SHIRES.

EXHIBITORS.

Wm. Crownover, Hudson, Iowa; Crawford & Griffin, Newton, Iowa; Geo. Eggert, Newton, Iowa; Chester A. Hanes, Decatur, Illinois; Frank E. Huston, Waukee, Iowa; Luther Huston, Blandinsville, Illinois; D. M. Johnston, Storm Lake, Iowa; George M. McCray, Fithian, Illinois; Charles E. Perkins, Burlington, Iowa; H. B. Smith, Bardolph, Illinois; L. N. & O. B. Sizer, Fisher, Illinois; G. W. Smith, Altoona, Iowa; Chas. H. & V. A. Summers, Malvern, Iowa; A. G. Soderberg, Osco, Illinois; Truman's Pioneer Stud Farm, Bushnell, Illinois; H. P. Wilkinson Bros., Mitchellville, Iowa; F. J. Woltman, Cedar Falls, Iowa.

AWARDS.

JUDGE........................ALEX GALBRAITH, DeKalb, Ill.

Stallion Four Years or Over—First, Coleshill Diamond King, 13808, (28216), Truman's Pioneer Stud Farm; second, Postland Black King, 13437, (29727), Truman's Pioneer Stud Farm; third, Thunderer Boy, 13807, Truman's Pioneer Stud Farm; fourth, Biscot Rival, 9921, A. G. Soderberg; fifth, Raglan III, 13879 (28696), Truman's Pioneer Stud Farm.

Stallion Over Three, Under Four—First, Boro Ragged Boy, 13518, Wm. Crownover; second, Comet VIII, 13154, (29257), Truman's Pioneer Stud Farm; third, Tatton Forest Chief, 12140, L. N. & O. B. Sizer; fourth, Pearl King II, 13884 (29712), Truman's Pioneer Stud Farm; fifth, Harold Conqueror II, 13989 (30505), Truman's Pioneer Stud Farm.

Stallion Over Two, Under Three—First, Aylesford Menestrel, 13443 (30094), Truman's Pioneer Stud Farm; second, Homefield Defiance, 13991 (31120), Truman's Pioneer Stud Farm; third, Holdenby Adonis, 13519 (30096), Wm. Crownover; fourth, Carlton Royal Grey, 13280 (30078), Truman's Pioneer Stud Farm.

Stallion Over One, Under Two—First, Tatton Eldorado, 13424, L. N. & O. B. Sizer; second, Elmland Conqueror, 13620, H. P. Wilkinson Bros.; third, Tatton Harold, 13425, L. N. & O. B. Sizer; fourth, Paramount Royalty, 13942, Wm. Crownover.

Stallion Foal—First, Paramount Milton, Wm. Crownover, second, Mapledale Champion, F. J. Woltman.

Stallion Three Years or Over, Bred by Exhibitor—First, Tatton Dray King, 12141, L. N. & O. B. Sizer; second, Brown Boy, 12462, Geo. Eggert.

Stallion Under Three, Bred by Exhibitor—First, Tatton Eldorado, 13424, L. N. & O. B. Sizer; second, Royal Surprise, Frank E. Huston; third, Elmland Menestrel, 13618, H. P. Wilkinson Bros.; fourth, Paramount Royalty, 13942, Wm. Crownover.

Yeld Mare, Four Years or Over—First, Tatton Aurora, 13992 (43530), Truman's Pioneer Stud Farm; second, Capstone's Flower, 53387 (10933), H. P. Wilkinson Bros.; third, Ciceter Belfry, 12367 (65541), Chas. H. & V. A. Summers; fourth, Strawberry Queen, 13993 (73170), Truman's Pioneer Stud Farm.

Mare and Foal, Mare to Count 50%, Foal 50%—First, Moulton Primella and foal, 10619, F. J. Woltman; second, Laura and foal, 7319, Wm. Crownover; third, Graby Easter Gift and foal, 12782, Geo. Eggert; fourth, Trenant Quality and foal, 10621, F. J. Woltman.

Filly Over Three, Under Four—First, Normandy Sweet Briar, (68038), Truman's Pioneer Stud Farm; second, Headon Nightingale, 13961, Geo. Eggert.

Filly Over Two, Under Three—First, Osco Princess, 12825, A. G. Soderberg, second, Bassinghall Sunrise (69370), Truman's Pioneer Stud Farm; third, Paramount Esther, 12529, Wm. Crownover; fourth, Lady Trenant, 13226, F. J. Woltman.

Champion Shire Stallion, Coleshill Diamond King, 1913 Iowa State Fair and Exposition, owned by Truman's Pioneer Stud Farm, Bushnell, Ill.

Filly Over One, Under Two—First, Pine Krest Primrose, 13225, Frank E. Huston; second, Eureka Diamond, 13772, H. B. Smith; third, Tatton Model 13427, L. N. & O. B. Sizer; fourth, Oak Lawn Easter Rose, 13247, Geo. Eggert.

Mare Foal—First, Marie Brilliant, Geo. Eggert; second, Woltman's Best, F. J. Woltman.

Mare Three Years or Over, Bred by Exhibitor—First, Tatton Blend, 12151, L. N. & O. B. Sizer, second, Tatton Rose, 12147, L. N. & O. B. Sizer.

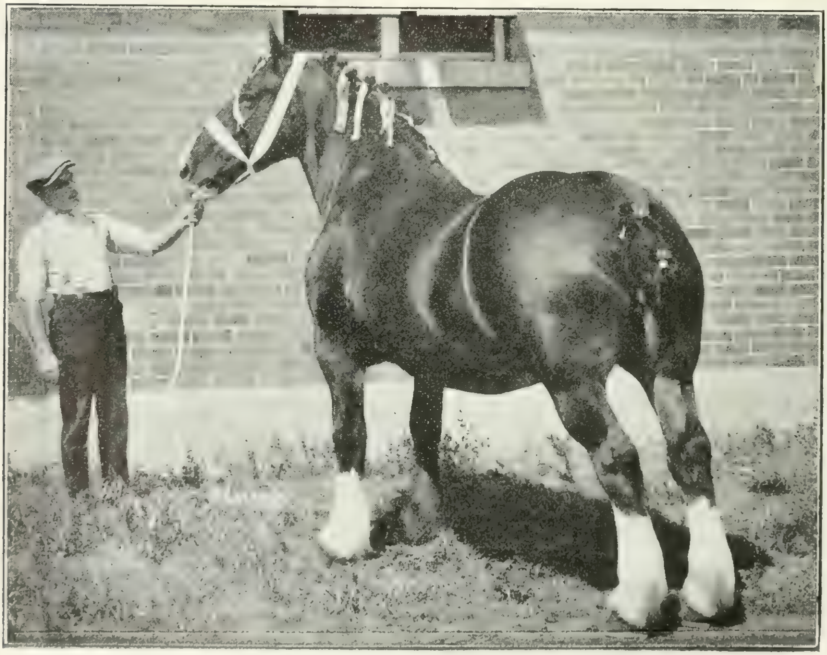
Mare Under Three, Bred by Exhibitor—First, Pine Krest Primrose, 13225, Frank E. Huston; second, Eureka Diamond, 13772, H. B. Smith; third, Osco Princess, 12825, A. G. Soderberg; fourth, Tatton Model, 13427 L. N. & O. B. Sizer.

Champion Stallion—First, Coleshill Diamond King, 13808 (28216), Truman's Pioneer Stud Farm; second, Boro Ragged Boy, 13518, Wm. Crownover.

Champion Mare—First, Tatton Aurora, 13992 (43530), Truman's Pioneer Stud Farm; second, Moulton Primella, 10619, F. J. Woltman.

Champion Stallion, Owned in Iowa—Boro Ragged Boy 13518, Wm. Crownover; second, Pine Krest Patterson, 13223, Frank E. Huston.

Champion Mare, Owned in Iowa—First, Moulton Primella, 10619, F. J. Woltman; second, Pine Krest Princess, Frank E. Huston.



Champion Shire Mare, Tatton Aurora, 1913 Iowa State Fair and Exposition, owned by Truman's Pioneer Stud Farm, Bushnell, Ill.

Get of Stallion—First, L. N. & O. B. Sizer; second, Wm. Crownover; third, F. J. Woltman.

Produce of Mare—First, L. N. & O. B. Sizer; second, Wm. Crownover; third, Geo. Eggert; fourth, F. J. Woltman.

Grand Display—First, L. N. & O. B. Sizer; second, F. J. Woltman.

Five Stallions Owned by Exhibitor—Truman's Pioneer Stud Farm.

SPECIAL PRIZES OFFERED BY THE SHIRE HORSE SOCIETY OF ENGLAND.

Best Shire Stallion—Coleshill Diamond King, 13808 (28216), Truman's Pioneer Stud Farm.

Best Shire Mare—Tatton Aurora, Truman's Pioneer Stud Farm.

SPECIAL PRIZES OFFERED BY THE AMERICAN SHIRE HORSE ASSOCIATION.

Champion Stallion, Any Age—Coleshill Diamond King, 13808 (28216), Truman's Pioneer Stud Farm.

Champion Mare, Any Age—Tatton Aurora, 13992 (43530), Truman's Pioneer Stud Farm.

Best American Bred Stallion, Any Age—Tatton Eldorado, 13424, L. N. & O. B. Sizer.

Best American Bred Mare, Any Age—Pine Krest Primrose, 13225. Frank E. Huston.

NATIONAL SHIRE HORSE BREEDERS' FUTURITY.

Opened and Guaranteed by the Chicago Daily Live Stock World.

Stallions—First, Tatton Eldorado, 13424, L. N. & O. B. Sizer; second, Elmland Menestrel, 13618, H. P. Wilkinson Bros.; third, Tatton Harold, 13425, L. N. & O. B. Sizer; fourth, Paramount Royalty, 13942, Wm. Crownover; fifth, Mapledale Masterpiece, 13227, F. J. Woltman; sixth, Tatton Bury Commander, 14040, L. N. & O. B. Sizer; seventh, Smith's Masterpiece, 14007, G. W. Smith; eighth, Elmland Conqueror, 13620, H. P. Wilkinson Bros.; ninth, Tatton Carbon, 14038, L. N. & O. B. Sizer.

Fillies—First, Pine Krest Primrose, 13225, Frank E. Huston; second, Eureka Diamond, 13772, H. B. Smith; third, Tatton Model, 13427, L. N. & O. B. Sizer; fourth, Oaklawn Easter Rose, 13247, Geo. Eggert; fifth, Elmland Violet, 13757, H. P. Wilkinson; sixth, Elsie May, 13982, Chester Hanes; seventh, Paramount Fuchsia, 13945, Wm. Crownover; eighth, Myra, 13995, D. M. Johnson; ninth, Altoona Princess, 14008, G. W. Smith; tenth, Rocks Golden Queen, 14018, C. H. & V. A. Summers.

BELGIANS.

EXHIBITORS.

Wm. Crownover, Hudson, Iowa; Crawford & Griffin, Newton, Iowa; W. L. DeClow, Cedar Rapids, Iowa; W. C. Estes, Packwood, Iowa; George Eggert, Newton, Iowa; R. F. French, Independence, Iowa; C. G. Good, Ogden, Iowa; G. W. Grigsby, Madrid, Iowa; Hildebrand Bros., Gladbrook, Iowa; Iowa State College, Ames, Iowa; Chas. Irvine, Ankeny, Iowa; H. Lefebure, Fairfax, Iowa; W. H. Milleson, Winterset, Iowa; C. W. McDermott, Wiota, Iowa; Geo. S. Perkins, Peoria, Illinois; Carl A. Rosenfeld, Kelley, Iowa; J. G. Scott, Cambridge, Iowa; Truman's Pioneer Stud Farm, Bushnell, Illinois; J. W. Thompson, Ankeny, Iowa; F. T. Williams, Pleasantville, Iowa.

AWARDS.

JUDGE..........................W. J. KENNEDY, Ames, Iowa.

Stallion Four Years or Over—First, Jules Remi, 61172, H. Lefebure; second, Porthos de Sarlardinge, 6214, Wm. Crownover; third, Galant de Schoonenberg, 7078 (72900), G. W. Grigsby; fourth, Morgan, 69916, W. L. DeClow; fifth, Faro De Tripsee, 4923 (58598), Hildebrand Bros.

Stallion Over Three, Under Four—First, Farceur, 7332, Wm. Crownover; second, Belvedere, 7246, Crawford & Griffin; third, Ergot, 7611, R. F. French; fourth, Mentor, 6780 (65588), C. E. Good; fifth, Farceur d'Avennos, 77278, W. L. DeClow.

Stallion Over Two, Under Three—First, Mon Louhait, 7549, Chas. Irvine; second, Bienfait, 7588 (80854), Chas. Irvine; third, Dragon (80862), C. G. Good; fourth, Bon de Onker, 6685, G. W. Grigsby.

Stallion Over One, Under Two—First, Governor Major, 6931, C. W. McDermott; second, Paramount Eticon, 7411, Wm. Crownover; third, Bijou, 7563, W. C. Estes; fourth, Irvinedale Prince, 7445, Chas. Irvine.

Stallion Foal—First, Prize Winner, W. C. Estes; second, H. Lefebure; third, Irvindale Victor, Chas. Irvine.

Stallion Under Three, Bred by Exhibitor—First, Paramount Jupiter, 7412, Wm. Crownover; second, Prize Winner, W. C. Estes; third, Bijou, 7563, W. C. Estes; fourth, Irvinedale Prince, 7445, Chas. Irvine.

Yeld Mare, Four Years or Over—First, Anna du Balcan, 3044, H. Lefebure; second, Fanny de Dadi, 2700, H. Lefebure; third, Mirza II Recht, 1902, Chas. Irvine; fourth, Suzanne, (89099), C. G. Good.

Mare and Foal, Mare to Count 50%, Foal 50%—First, Belle Terlinder and foal, 2793, R. F. French; second, Miss Nora and foal, 620, W. C. Estes; third, Ida De Brevine and foal, 837, Chas Irvine; fourth, Albonie and foal, 2696, H. Lefebure.

Filly Over Three, Under Four—First, Flora, 2801, R. F. French; second, Quimperlette, 3068, Wm. Crownover; third, Civette, 3065, Wm. Crownover; fourth, Stella, 3206 (88861), C. G. Good.

Filly Over Two, Under Three—First, H. Lefebure; second, Young Mabel, 2630, W. C. Estes; third, Alice de Op, 3231, Wm. Crownover, fourth, Berika de Thor, Vol. XX, W. L. DeClow.

Filly Over One, Under Two—First, Irma, 3409, Geo. Eggert; second, Jeanette Rosengift, Carl A. Rosenfeld; third, Cora, 3432 (89083), Chas. Irivine; fourth, Marie, 3275, Chas. Irvine; fifth, Bay Beauty, 3379, W. C. Estes.

Mare Foal—First, Lady, R. F. French; second, C. G. Good.

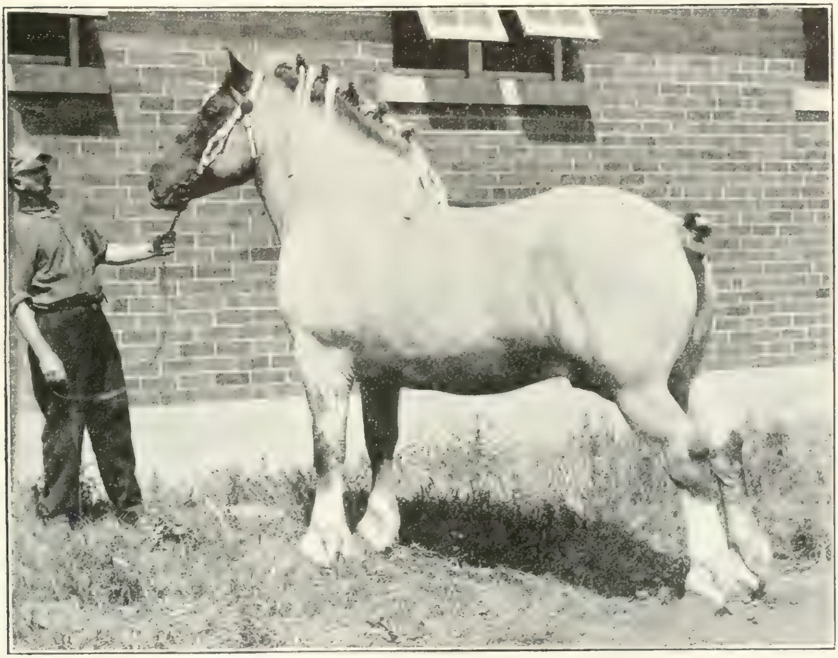
Mare, Three Years or Over, Bred by Exhibitor—First, Miss Nora, 620, W. C. Estes.

Mare Under Three, Bred by Exhibitor—First, Young Mabel, 2630, W. C. Estes; second, Blue Belle, 2666, Chas. Irvine; third, Jenette de Lue, 2830, G. W. Grigsby; fourth, Marie, 3275, Chas. Irvine.

Champion Stallion—First, Farceur, 7332, Wm. Crownover; second, Jules Remi, 61172, H. Lefebure.

Champion Mare—First, Anna du Balcan, 3044, H. Lefebure; second, Flora, 2801, R. F. French.

Champion Stallion, Owned in Iowa—First, Farceur, 7332, Wm. Crownover; second, Jules Remi, 61172, H. Lefebure.



Champion Belgian Stallion, Farceur, 1913 Iowa State Fair and Exposition, owned by Wm. Crownover, Hudson, Iowa.

Champion Mare, Owned in Iowa—First, Anna du Balcan, 3044, H. Lefebure; second, Flora, 2801, R. F. French.

Get of Stallion—First, W. C. Estes; second, Chas. Irvine.

Produce of Mare—First, Chas. Irvine; second, W. C. Estes; third, Chas. Irvine.

Grand Display—First, Chas. Irvine.

Five Stallions, Owned by Exhibitor—First, Wm. Crownover; second, W. L. DeClow; third, C. G. Good.

SPECIAL PRIZES OFFERED BY THE AMERICAN ASSOCIATION OF IMPORTERS AND BREEDERS OF BELGIAN DRAFT HORSES.

Stallion Four Years Old and Over—First, Jules Remi, 61172, H. Lefebure; second, Porthos de Sarlardinge, 6214, Wm. Crownover; third, Galant de Schoonenberg, 7078 (72900), G. W. Grigsby; fourth, Morgan, 69916, W. L. DeClow; fifth, Faro De Tripsee, 4923 (58598), Hildebrand Bros.

Stallion Three Years, Under Four—First, Farceur, 7332, Wm. Crownover; second, Belvedere, 7246, Crawford and Griffin; third, Ergot, 7611, R. F. French; fourth, Mentor, 6780 (65588), C. G. Good; fifth, Farceur d'Avennos, 77278, W. L. DeClow.

Stallion Two Years, Under Three—First, Mon Louhait, 7549, Chas. Irvine; second, Bienfait, 7588 (80854), Chas. Irvine; third, Dragon (80862), C. G. Good; fourth, Bon De Onker, 6685, G. W. Grigsby.

Five Stallions, Property of One Exhibitor—First, Wm. Crownover; second, W. L. DeClow.

Champion Stallion, Any Age—First, Wm. Crownover; second, H. Lefebure.

Champion Mare, Any Age—First, Anna du Balcan, 3044, H. Lefebure; second, Flora, 2801, R. F. French.

NATIONAL BELGIAN BREEDERS' FUTURITIES.

Opened and Guaranteed by the Chicago Daily Live Stock World.

Stallions—First, Governor Major, 6931, C. W. McDermott; second, Paramount Jupiter, 7412, Wm. Crownover; third, Bijou, 7563, W. C. Estes; fourth, Irvindale Prince, Chas. Irvine; fifth, Paramount Eticon, 7411, Wm. Crownover.

Fillies—First, Miss Rosengift, Carl A. Rosenfeld; second, Marie, Chas. Irvine; third, Bay Beauty, 3379, W. C. Estes; fourth, Ruby, Chas. Irvine; fifth, Paulette, Chas. Irvine; sixth, Katherine, Chas. Irvine.

DRAFT GELDINGS AND MARES.

EXHIBITORS.

Crawford & Griffin, Newton, Iowa; G. E. Cole, Fonda, Iowa; C. H. Eversold, Altoona, Iowa; G. W. Grigsby, Madrid, Iowa; Hildebrand Bros., Gladbrook, Iowa; Chas. Irvine, Ankeny, Iowa; P. S. Moffet, Tipton, Iowa; Morris Bros., Stockport, Iowa; James Pedley, Britt, Iowa; Archibald Smith, Altoona, Iowa.

AWARDS.

JUDGE........................R. B. OGILVIE, Chicago, Illinois.

Gelding or Mare, Four Years or Over—First, Larry, P. W. Moffett; second, Mike, P. W. Moffett; third, Maud, J. W. Thompson; fourth, Kate, G. W. Grigsby; fifth, Babe, C. H. Eversold.

Gelding or Mare, Three Years, Under Four—First, Heinie, P. W. Moffett; second, Coley, Chas. Irvine.

Gelding or Mare, Two Years, Under Three—First, Tom, A. Smith; second, Ted, A. Smith; third, C. H. & V. A. Summers; fourth, Barney; Chas. Irvine; fifth, Molly, C. B. Dannen & Sons.

Gelding or Mare, One Year, Under Two—First, Nibs, J. W. Thompson; second, Rose, Chas. Irvine; third, Lady Carmichael, Morris Bros.; fourth, Bon Nette, G. W. Grigsby.

Horse or Filly Foal—First, Dan, J. W. Thompson; second, Buster, Morris Bros.; third, Nellie, Hildebrand Bros.; fourth, Nic, C. H. Eversold; fifth, Dan, C. H. Eversold.

Farmers' Team—First, W. V. Hixson; second, R. F. French; third, C. H. & V. A. Summers; fourth, P. W. Moffett; fifth, C. G. Good; sixth, A. Smith.

Gelding or Mare, Four Years or Over—First, Woodrow Wilson; Truman's Pioneer Stud Farm; second, Teddy Roosevelt, Truman's Pioneer Stud Farm; third, Larry, P. W. Moffett, fourth, Mike, P. W. Moffett; fifth, Kate, G. W. Grigsby.

Draft Team in Harness—First, Roosevelt and Wilson, Truman's Pioneer Stud Farm; second, Mike and Larry, P. W. Moffett; third, Tom and Ted, A. Smith; fourth, Kate and John, G. W. Grigsby.

Champion Gelding or Mare—First, Woodrow Wilson, Truman's Pioneer Stud Farm, second, Teddy Roosevelt, Truman's Pioneer Stud Farm.

STANDARD BRED TROTTERS.

EXHIBITORS.

Horace L. Anderson, Des Moines, Iowa; Thos. Bass, Mexico, Missouri; Chas. Calamese, Burlington Junction, Missouri; Ed. Crawford, Des Moines, Iowa; Bert Harmon, Des Moines, Iowa; Hopper Stock Farm, Indianola, Iowa; Houchin and Anderson, Jefferson City, Missouri; Linn Hill Park Stock Farm, Harlan, Iowa; F. A. Mathis, Des Moines, Iowa; O. J. Mooers, Des Moines, Iowa; J. R. Peak & Son, Winchester, Illinois; Ed. Person, Carlisle, Iowa; Ben Phillips, Jefferson, Iowa; R. W. Smith, St. Charles, Iowa; Thos. F. Stevenson, Des Moines, Iowa; I. Ross Thompson, Des Moines, Iowa; Mrs. C. W. Wolford, Des Moines, Iowa; Andrew J. Wilfong, Knoxville, Iowa.

AWARDS.

JUDGE....................W. A. DOBSON, Des Moines, Iowa.

Stallion Four Years or Over—First, Tommy Doyl, 50261, J. R. Peak & Son; second, Robert C., 50863, J. R. Peak & Son; third, Moko Boy, 46504, Horace L. Anderson; fourth, Twilbrant, 5753, Tom Bass.

Stallion Over Three, Under Four—First, Isaac R. T., I. Ross Thompson; second, Tom Jackson, 51206, J. R. Peak & Son; third, K. J. E., E. A. Elliott.

Stallion Over Two, Under Three—First, Mr. Dumpling, 61280, J. R. Peak & Son; second, Silver Nick, 56491, Ben Phillips; third, J. W. A., H. L. Anderson; fourth, Japalac, 59402, Ed Person.

Stallion Over One, Under Two—First, Golden Grain, J. R. Peak & Son.

Stallion Foal—First, E. A. E., E. A. Elliott.

Yeld Mare, Four Years or Over—First, Countess Maid, Vol. 19, J. R. Peak & Son; second, Winnie Blake, H. L. Anderson; third, Earla Cocaden Vol. 18, J. R. Peak & Son; fourth, Journey Maid, Thos. Bass.

Filly Over Three, Under Four—First, Pegasus Phoebie, H. L. Anderson.

Filly Over Two, Under Three—First, Queen Vol. 19, J. R. Peak & Son; second, Fay Cord, Ed Crawford; third, Mamie Earl, 102865, R. W. Smith.

Filly Over One, Under Two—First, Baroness Creator, Vol. 21, J. R. Peak & Son; second, Allazelle, Vol. 20, Chas. Calamese; third, Maud C., Ed. Crawford.

Mare Foal—First, Lola E., E. A. Elliott; second, Lilly Hail, Ed. Crawford.

Mare and Foal—First, E. A. Elliott; second, Fair Maiden and foal, Ed. Crawford.

Champion Stallion—First, Tommy Doyl, J. R. Peak & Son; second, Mr. Dumpling, 61280, J. R. Peak & Son.

Champion Mare—First, Countess Maid, Vol. 19, J. R. Peak & Son; second, Baroness Creator, Vol. 21, J. R. Peak & Son.

Get of Stallion—First, J. R. Peak & Son; second, E. A. Elliott.

Produce of Mare—First, J. R. Peak & Son; second, H. L. Anderson; third, I. Ross Thompson; fourth, Ed. Crawford.

Grand Display—First, J. R. Peak & Son.

AMERICAN CARRIAGE HORSES.

EXHIBITORS.

Horace L. Anderson, Des Moines, Iowa; Thos. Bass, Mexico, Missouri; Joseph C. Brunk, Springfield, Illinois; H. C. Davis, Ames, Iowa; E. A. Elliott, Des Moines, Iowa; Wallace Estill & Son, Estill, Missouri; Hamilton Bros., Keota, Iowa; Hendricks and Robinson, Columbia, Missouri; Hopper Stock Farm, Indianola, Iowa; Houchin and Anderson, Jefferson City, Missouri; E. H. Jackson, Jefferson, Iowa; F. A. Mathis, Des Moines, Iowa; C. E. Monahan, Des Moines, Iowa; O. J. Mooers, Des Moines, Iowa; Morgan Horse Farm, Plainfield, Iowa; J. R. Peak & Son, Winchester, Illinois; Ed Person, Carlisle, Iowa; Ben Phillips, Jefferson, Iowa; Chas. Seibert, Waverly, Iowa; Allen L. Smith, Plainfield, Iowa; Thompson I. Ross, Des Moines, Iowa; Wild Rose Farm, St. Charles, Illinois; Andrew J. Wilfong, Knoxville, Iowa; Mrs. C. W. Wolford, Des Moines, Iowa.

AWARDS.

JUDGE........................W. A. DOBSON, Des Moines.

Stallion Four Years or Over—First, Advance Guard, 45938, O. J. Mooers; second, Reade Rose, Wild Rose Farm; third, Gournea, 55835, J. R. Peak & Son; fourth, Tommy Doyl, 50261, J. R. Peak & Son.

Stallion Over Three, Under Four—First, Roy Rose, Wild Rose Farm; second, Carmon King, Wallace Estill & Son; third, Red Ethan, 6638, Jos. C. Brunk; fourth, Tom Jackson, 51206, J. R. Peak & Son.

Stallion Over Two, Under Three—First, Mr. Dumpling, 61280, J. R. Peak & Son; second, Montgomery, 6684, Morgan Horse Farm.

Stallion Over One, Under Two—First, Golden Grain, J. R. Peak & Son; second, Prince of Reades, 6708, Hendricks & Robinson.

Stallion With Three of His Get—No first; second, J. R. Peak & Son; third, Morgan Horse Farm; fourth, Thos. Bass.

Yeld Mare, Four Years or Over—First, Flirting Princess, 10790, O. J. Mooers; second, Countess Maid, Vol. 18, J. R. Peak & Son; third, Queen of Spades, Wild Rose Farm; fourth, Henrietta Green, Wallace Estill & Son.

Filly Over Three, Under Four—First, Primrose, Wild Rose Farm; second, St. Louis Maid, Vol. 19, J. R. Peak & Son; third, Roberta, Hendricks and Robinson.

Filly Over Two, Under Three—First, My Idol, Wallace Estill & Son; second, Frances Peavine, Thos. Bass; third, Queen, Vol. 19, J. R. Peak & Son; fourth, O. J. Mooers.

Filly Over One, Under Two—First, J. R. Peak & Son.

Stallion or Mare Foal—First, Ellen Woodrow, I. Ross Thompson; second, Jos. Brunk; third, Easter Peavine, Thos. Bass; fourth, Hendricks and Robinson.

Champion Stallion—First, Advance Guard, O. J. Mooers; second, Roy Rose, Wild Rose Farm.

Champion Mare—First, Flirting Princess, O. J. Mooers; second, Primrose, Wild Rose Farm.

ROADSTERS.

EXHIBITORS.

Horace L. Anderson, Des Moines, Iowa; Thos. Bass, Mexico, Missouri; Joseph C. Brunk, Springfield, Illinois; D. C. Cameron, Winnipeg, Canada; Hugh O. Cassidy, Des Moines, Iowa; H. C. Davis, Ames, Iowa; J. B. Gracey, Des Moines, Iowa; Hopper Stock Farm, Indianola, Iowa; E. H. Jackson, Jefferson, Iowa; P. W. Moffet, Tipton, Iowa; O. J. Mooers, Des Moines, Iowa; J. R. Peak & Son, Winchester, Illinois; Ben Phillips, Jefferson, Iowa.

AWARDS.

JUDGES........................WALTER PALMER, Ottawa, Ill.
J. O. WILLIAMS, Ft. Collins, Colo.

Stallion, Mare or Gelding—First, Robert C., J. R. Peak & Son; second, Tommy Doyl, 50261, J. R. Peak & Son; third, D. C. Cameron; fourth, Countess Maid, J. R. Peak & Son.

Pair Stallions, Mares or Geldings—First, Gray Read and Earla Cocaden, J. R. Peak & Son; second, Tommy Doyl and Tommy Piper, J. R. Peak & Son; third, Counselor Dean & Robert C., J. R. Peak & Son; fourth, Journey Maid and Mate, Thos. Bass.

RUNABOUTS.

EXHIBITORS.

Horace L. Anderson, Des Moines, Iowa; G. K. Barton, Cedar Rapids, Iowa; Thos. Bass, Mexico, Missouri; Joseph C. Brunk, Springfield, Illinois; D. C. Cameron, Winnipeg, Canada; Hugh O. Cassidy, Des Moines; H. C. Davis, Ames, Iowa; J. B. Gracey, Des Moines, Iowa; Hamilton Bros., Keota, Iowa; Hendricks & Robinson, Columbia, Missouri; Hopper Stock Farm, Indianola, Iowa; Houchin & Anderson, Jefferson City, Missouri; E. H. Jackson, Jefferson, Iowa; Mrs. H. B. Kinnard, Des Moines, Iowa; P. W. Moffet, Tipton, Iowa; O. J. Mooers, Des Moines, Iowa; Pabst Stock Farm, Oconomowoc, Wisconsin; J. R. Peak & Son, Winchester, Illinois; Ben

Phillips, Jefferson, Iowa; H. H. Polk, Des Moines, Iowa; Bruce Robinson, Des Moines, Iowa; Thos. F. Stevenson, Des Moines, Iowa; J. C. Strubhar, Peoria, Illinois; Wild Rose Farm, St. Charles, Illinois.

AWARDS.

JUDGES....................WALTER PALMER, Ottawa, Ill.
J. O. WILLIAMS, Ft. Collins, Colo.

Stallion, Mare or Gelding—First, Happy Maid, D. C. Cameron; second, Ikebuck, O. J. Mooers; third, Advance Guard, 45938, O. J. Mooers; fourth, The Rose Lady, Wild Rose Farm.

Pair Stallions, Mares or Geldings—First, Happy Maid and Ladas, D. C. Cameron; second, Royal Regent and Mate, O. J. Mooers; third, Paddy Dean and Lady McNaught, J. R. Peak & Son; fourth, Purity Lad and Mate, Hamilton Bros.

Stallion, Mare or Gelding—First, Conroy Blake, H. L. Anderson; second, The Versatile Vol. XXI, Hugh O. Cassidy; third, Pickles, E. H. Jackson; fourth, Winnie Blake, H. L. Anderson.

FAMILY TURNOUT.

EXHIBITORS.

Thos. Bass, Mexico, Missouri; D. C. Cameron, Winnipeg, Canada; Hugh O. Cassidy, Des Moines, Iowa; H. C. Davis, Ames, Iowa; Wallace Estill & Son, Estill, Missouri; J. B. Gracey, Des Moines, Iowa; Hamilton Bros., Keota, Iowa; C. E. Monahan, Des Moines, Iowa; O. J. Mooers, Des Moines, Iowa; J. R. Peak & Son, Winchester, Illinois.

AWARDS.

JUDGES....................WALTER PALMER, Ottawa, Ill.
J. O. WILLIAMS, Ft. Collins, Colo.

Single Horse Family Turnout—First, John Alden, O. J. Mooers; second, Lady Janet, J. R. Peak & Son; third, Thos. Bass; fourth, Wallace Estill & Son.

LADIES' TURNOUT.

EXHIBITORS.

Thos. Bass, Mexico, Missouri; D. C. Cameron, Winnipeg, Canada; H. C. Davis, Ames, Iowa; E. B. Dodson, Stanwood, Iowa; Wallace Estill & Son, Estill, Missouri; P. W. Moffet, Tipton, Iowa; C. E. Monahan, Des Moines, Iowa; O. J. Mooers, Des Moines, Iowa; J. R. Peak & Son, Winchester, Illinois; Wild Rose Farm, St. Charles, Illinois.

AWARDS.

JUDGES....................WALTER PALMER, Ottawa, Ill.
J. O. WILLIAMS, Ft. Collins, Colo.

Single Mare or Gelding—First, The Spring Maid, 111115, O. J. Mooers; second, Leutoll, D. C. Cameron; third, Montrose, Wild Rose Farm; fourth, Jno. Alden, O. J. Mooers.

Pair Mares or Geldings or Mare and Gelding—First, Maie McDonald and Mate, O. J. Mooers; second, Happy Maid and Flourish, D. C. Cameron; third, Queen of Spades and Queen of Clubs, Wild Rose Farm.

BROUGHAM HORSES.

EXHIBITORS.

D. C. Cameron, Winnipeg, Canada; O. J. Mooers, Des Moines, Iowa; J. R. Peak & Son, Winchester, Illinois; Wild Rose Farm, St. Charles, Illinois.

AWARDS.

JUDGES....................J. O. WILLIAMS, Ft. Collins, Colo.
WALTER PALMER, Ottawa, Ill.

Mare or Gelding to Brougham or Victoria—First, Leutoll, D. C. Cameron; second, John Alden, O. J. Mooers.

Pair Mares or Geldings or Mare and Gelding to Brougham or Victoria—First, Lucky Jim and Leutoll, D. C. Cameron; second, John Alden and Mate, O. J. Mooers; third, The Rose Girl and the Rose Lady, Wild Rose Farm.

HIGH STEPPERS AND PARK HORSES.

EXHIBITORS.

G. K. Barton, Cedar Rapids, Iowa; Thos. Bass, Mexico, Missouri; Joseph C. Brunk, Springfield, Illinois; C. D. Cameron, Winnipeg, Canada; Hugh O. Cassidy, Des Moines, Iowa; E. B. Dodson, Stanwood, Iowa; Wallace Estill & Son, Estill, Missouri; Geo. A. Heyl, Washington, Illinois; Hopper Stock Farm, Indianola, Iowa; Houchin & Anderson, Jefferson City, Missouri; P. W. Moffett, Tipton, Iowa; C. E. Monahan, Des Moines, Iowa; O. J. Mooers, Des Moines, Iowa; Pabst Stock Farm, Oconomowoc, Wisconsin; J. R. Peak & Son, Winchester, Illinois; H. H. Polk, Des Moines, Iowa; J. C. Strubhar, Peoria, Illinois; Wild Rose Farm, St. Charles, Illinois.

AWARDS.

JUDGES....................J. O. WILLIAMS, Ft. Collins, Colo.
ROBT. PALMER, Ottawa, Ill.

Stallion Mare or Gelding Up to 15-2—First, Queen Daisy, Pabst Stock Farm; second, O. J. Mooers; third, Fireworks, D. C. Cameron; fourth, Derwent, J. A. Knott.

Stallon Mare or Gelding 15-2 and Over—First, Lucky Jim, D. C. Cameron; second, Meanwood, 851 (8239), Pabst Stock Farm; third, Bagthorpe Sultan, 910 (9596), Pabst Stock Farm; fourth, Jap Rose, Wild Rose Farm.

Pair Stallions, Mares or Geldings Up to 15-2—First, Queen Daisy and Mystery, Pabst Stock Farm; second, Montrose and Secham Mason, Wild Rose Farm; third, Fireworks and Flourish, D. C. Cameron; fourth, Queen of Spades and Queen of Clubs, Wild Rose Farm.

Pair Stallions, Mares or Geldings Over 15-2—First, Lucky Jim and Leutoll, D. C. Cameron; second, The Spring Maid and Flirting Princess, O. J. Mooers; third, Jap Rose and Mate, Wild Rose Farm; fourth, Nada & Thordine, Pabst Stock Farm.

Stallion, Mare or Gelding—First, Queen of the Flowers, E. B. Dodson; second, Hamilton Bros.; third, The Versatile Vol. XXI, Hugh O. Cassidy; fourth, Montgomery 2787, C. E. Monahan.

Pair Stallions, Mares or Geldings—First, I-Mo King and Mate, H. H. Polk; second, Hamilton Bros.

GIG HORSES.

EXHIBITORS.

Thos. Bass, Mexico, Missouri; Chas. Calamese, Burlington Jct., Missouri; D. C. Cameron, Winnipeg, Canada; E. B. Dodson, Stanwood, Iowa; Wallace Estill & Son, Estill, Missouri; Geo. A. Heyl & Son, Washington, Illinois; Houchin & Anderson, Jefferson City, Missouri; P. W. Moffett, Tipton, Iowa; C. E. Monahan, Des Moines, Iowa; O. J. Mooers, Des Moines, Iowa; Pabst Stock Farm, Oconomowoc, Wisconsin; J. R. Peak & Son, Winchester, Illinois; J. C. Strubhar, Peoria, Illinois; Wild Rose Farm, St. Charles, Illinois.

AWARDS.

JUDGES....................J. O. WILLIAMS, Ft. Collins, Colo.
WALTER PALMER, Ottawa, Ill.

Horses Not Exceeding 15-2—First, Spring Maid, O. J. Mooers; second, Queen Daisy, Pabst Stock Farm; third, Ladas, D. C. Cameron; fourth, Derwent May, J. A. Knott.

Horses Over 15-2—First, Lucky Jim, D. C. Cameron; second, Meanwood, Pabst Stock Farm; third, Jap Rose, Wild Rose Farm; fourth, Read Rose, Wild Rose Farm.

TANDEMS.

EXHIBITORS.

Thos. Bass, Mexico, Missouri; D. C. Cameron, Winnipeg, Canada; Geo. A. Heyl, Washington, Illinois; Houchin and Anderson, Jefferson City, Missouri; O. J. Mooers, Des Moines, Iowa; Pabst Stock Farm, Oconomowoc, Wisconsin; J. R. Peak & Son, Winchester, Illinois; J. C. Strubhar, Peoria, Illinois; Wild Rose Farm, St. Charles, Illinois.

AWARDS.

JUDGES........................WALTER PALMER, Ottawa, Ill.
J. O. WILLIAMS, Ft. Collins, Colo.

Tandem Team, Wheeler Over 15-2—First, Lucky Jim and Leutoll, D. C. Cameron; second, Meanwood and Queen Daisy, Pabst Stock Farm; third, Sunshine and Dorthea Rose, Wild Rose Farm; fourth, O. J. Mooers.

Tandem Team—First, Fireworks and Flourish, D. C. Cameron; second, Royal Regent and Advance Guard, O. J. Mooers; third, Reade Rose and Mate, Wild Rose Farm; fourth, O. J. Mooers.

UNICORNS.

EXHIBITORS.

D. C. Cameron, Winnipeg, Canada; O. J. Mooers, Des Moines, Iowa; Pabst Stock Farm, Oconomowoc, Wisconsin; J. R. Peak & Son, Winchester, Illinois; Wild Rose Farm, St. Charles, Illinois.

AWARDS.

JUDGES....................WALTER PALMER, Ottawa, Ill.
J. O. WILLIAMS, Ft. Collins, Colo.

Unicorn Team—First, Pabst Stock Farm; second, D. C. Cameron; third, Wild Rose Farm; fourth, O. J. Mooers.

FOUR-IN-HAND.

EXHIBITORS.

D. C. Cameron, Winnipeg, Canada; O. J. Mooers, Des Moines, Iowa; Pabst Stock Farm, Oconomowoc, Wisconsin; J. R. Peak & Son, Winchester, Illinois; Wild Rose Farm, St. Charles, Illinois.

AWARDS.

JUDGES....................WALTER PALMER, Ottawa, Ill.
J. O. WILLIAMS, Ft. Collins, Colo.

Road Four—First, Wild Rose Farm; second, O. J. Mooers; third, J. R. Peak & Son.

Park Four—First, Wild Rose Farm; second, Pabst Stock Farm; third, D. C. Cameron; fourth, O. J. Mooers.

CHAMPIONSHIP HARNESS HORSES.

Champion Harness Stallion—First, Advance Guard, O. J. Mooers; second, Bagthorp Sultan, Pabst Stock Farm.

Champion Harness Mare or Gelding—First, Lucky Jim, D. C. Cameron; second, Spring Maid, O. J. Mooers.

SADDLE HORSES.

EXHIBITORS.

Thos. Bass, Mexico, Missouri; G. K. Barton, Cedar Rapids, Iowa; D. C. Cameron, Winnipeg, Canada; E. V. Dodson, Stanwood, Iowa; Wallace Estill & Son, Estill, Missouri; E. A. Elliott, Des Moines, Iowa; H. A. Greenwell, Lakeman, Missouri; J. B. Gracey, Des Moines, Iowa; Houchin & Anderson, Jefferson City, Missouri; Hamilton Bros., Keota, Iowa; Mrs. H. B. Kinnard, Des Moines, Iowa; O. J. Mooers, Des Moines, Iowa; C. E. Monahan, Des Moines, Iowa; Charles E. Perkins, Burlington, Iowa; H. H. Polk, Des Moines, Iowa; J. R. Peak & Sons, Winchester, Illinois; B. F. Redman, Oskaloosa, Iowa; Bruce Robinson, Washington, Iowa; H. Rasmussen, Lake Forest, Illinois; J. C. Strubhar, Peoria, Illinois; Dorothy Sprague, Des Moines, Iowa; Wm. Timmerman, Manning, Iowa; John A. Vickrey, Macon, Missouri; C. R. Wells, Washington, Iowa.

AWARDS.

JUDGE.......................WALTER PALMER, Ottawa, Ill.

Gelding or Mare Four Years or Over—First, Miss Cliff, Wallace Estill & Son; second, Jackdare, Thos. Bass; third, Elizabeth Chief, 10759, Hamilton Bros.; fourth, Jack Bloomfield, Thos. Bass; fifth, High Ball, C. R. Wells.

Gelding or Mare Over Three, Under Four—First, Pauline Mac, 9188, Hamilton Bros.; second, Thos. Bass, Mexico, Missouri; third, Jack London, Wallace Estill & Son.

Stallion Four Years and Over—First, Cason McDonald, Thos. Bass; second, Art Bonta, 2267, Hamilton Bros.; third, Chester Peavine, Thos. Bass; fourth, Mexcinal, 2775, C. R. Wells; fifth, Montgomery, 2787, C. E. Monahan.

Stallion Over Three, Under Four—First, Carmen King, Wallace Estill & Son; second, Thos. Bass; third, Woods A. Dare, Thos. Bass.

Champion Stallion, Mare or Gelding—First, Miss Cliff, Wallace Estill & Son; second, Cason McDonald, Thos. Bass.

Stallion Two Years Old Shown in Hand—First, Thos. Bass; second, Newton Denmark, Wallace Estill & Son.

Mare Two Years Old Shown in Hand—First, My Idol, Wallace Estill & Son; second, Frances Highlander, B. F. Redman; third, Frances Peavine, 10718, Thos. Bass; fourth, Thos. Bass.

WALK, TROT AND CANTER.

Mare or Gelding Any Age—First, Ikebuck, O. J. Mooers; second, Country Squire, Pabst Stock Farm; third, Paddy Dean, J. R. Peak & Son; fourth, Daisie Merritt, Thos. Bass; fifth, Henrietta Green, Wallace Estill.

Stallion Any Age—First, Rex Chief A, Thos. Bass; second, Carmen King, Wallace Estill; third, Montgomery, 2787, C. E. Monahan; fourth, Art Bonta, 2267, Hamilton Bros.

Mare or Gelding, Ridden by Lady—First, Princess Charming, O. J. Mooers; second, Leo, D. C. Cameron; third, Paddy Dean, J. R. Peak & Son; fourth, Daisie Merritt, Thos. Bass; fifth, Junette, 4238, Bruce Robinson.

COMBINED HARNESS AND SADDLE HORSES.

Stallion, Mare or Gelding Any Age, Five Gaited—First, Miss Cliff, Wallace Estill & Son; second, Chester Peavine, Thos. Bass; third, Pauline Mac, 9188, Hamilton Bros.; fourth, Montgomery, 2787, C. E. Monahan; fifth, Senator Cummins, H. H. Polk.

Stallion, Mare or Gelding Any Age, Three Gaited—First, Ikebuck, O. J. Mooers; second, Skylark, Pabst Stock Farm; third, Paddy Dean, J. R. Peak & Son; fourth, Daisie Merritt, Thos. Bass; fifth, Lena Collins, Thos. Bass.

HIGH SCHOOL HORSES.

Stallion, Mare or Gelding, Any Age—First, Bell Beach, Thos. Bass; second, Napoleon, Hamilton Bros.; third, Senator Cummins, H. H. Polk; fourth, Soldier Boy, Thos. Bass.

Mare or Gelding, Three Years or Over—First, Elizabeth Chief, 10759, Hamilton Bros.; second, The Colonel, B. F. Redman; third, Pauline Mac, 9188, Hamilton Bros.; fourth, Fatima, Hamilton Bros.

Stallion, Three Years or Over—First, Art Bonta, 2267, Hamilton Bros.; second, Sun Dance, G. K. Barton; third, Montgomery, 2787, C. E. Monahan; fourth, Mexcinal, 2775, C. R. Wells.

SPECIAL PREMIUM OFFERED BY THE AMERICAN SADDLE HORSE BREEDERS' ASSOCIATION.

Stallion or Mare, Three Years or Under—Sun Dance, G. K. Barton.

HUNTERS AND HIGH JUMPERS.

EXHIBITORS.

Thos. Bass, Mexico, Missouri; D. C. Cameron, Winnipeg, Canada; Hamilton Bros., Keota, Iowa; Bruce Robinson, Washington, Iowa; H. Rasmussen, Lake Forest, Illinois; Wild Rose Farm, St. Charles, Illinois.

AWARDS.

JUDGES....................J. O. WILLIAMS, Ft. Collins, Colo.
WALTER PALMER, Ottawa, Ill.

Light Weight Hunters, Carrying up to 150 Pounds—First, Association, Wild Rose Farm; second, Gazelle Cherry, H. Rasmussen; third, Alston, H. Rasmussen; fourth, Junette, 4238, Bruce Robinson.

Middleweight Hunters, Carrying up to 175 Pounds—First, Strathclair, D. C. Cameron; second, Junette, 4238, Bruce Robinson; third, Princelike, H. Rasmussen.

High Jump—First, Alston, H. Rasmussen; second, Association, Wild Rose Farm; third, Leo, D. C. Cameron; fourth, H. Rasmussen.

Lady's Hunter, Ridden by Lady—First, Alston, H. Rasmussen; second, Gazelle Cherry, H. Rasmussen; third, Princelike, H. Rasmussen.

Champion Hunter—First, Alston, H. Rasmussen; second, Association, Wild Rose Farm.

MILITARY HORSES.

EXHIBITORS.

G. K. Barton, Cedar Rapids, Iowa; Thos. Bass, Mexico, Missouri; E. F. Brown, Derby, Iowa; Joseph C. Brunk, Springfield, Illinois; Hugh O. Cassidy, Des Moines, Iowa; H. C. Davis, Ames, Iowa; Wallace Estill & Son, Estill, Missouri; Hamilton Bros., Keota, Iowa; C. E. Monahan, Des Moines, Iowa; O. J. Mooers, Des Moines, Iowa; Morgan Horse Farm, Plainfield, Iowa; Pabst Stock Farm, Oconomowoc, Wisconsin; J. R. Peak & Son, Winchester, Illinois; Charles E. Perkins, Burlington, Iowa; H. H. Polk, Des Moines, Iowa; Bruce Robinson, Washington, Iowa; Chas.

Seibert, Waverly, Iowa; Miss Dorothy Sprague, Des Moines, Iowa; Wm. Timmerman, Manning, Iowa; Jno. Vickrey, Macon, Missouri; Wild Rose Farm, St. Charles, Illinois.

AWARDS.

JUDGES....................J. O. WILLIAMS, Fort Collins, Colo.
J. RUSH LINCOLN, Ames, Iowa.
WALTER PALMER, Ottawa, Ill.

Gelding or Mare Suitable for Officer's Mount—First, Soldier Boy, Thos. Bass; second, Skylark, Pabst Stock Farm; third, Purity Lad, Hamilton Bros.; fourth, Sen. Cummins, H. H. Polk.

SPECIAL OFFERED BY C. E. PERKINS, BURLINGTON, IOWA.

Stallion Suitable to Sire Cavalry Remounts, To Be Shown in Hand—First, Woodson, 29577, Chas. E. Perkins; second, Rex Chief A., 2473, Thos. Bass; third, Gournea, 55835, J. R. Peak & Son; fourth, Sangamo, 6008, Jos. C. Brunk.

MORGAN.

EXHIBITORS.

Jos. C. Brunk, Springfield, Illinois; E. F. Brown, Derby, Iowa; Thos. Bass, Mexico, Missouri; H. C. Davis, Ames, Iowa; Hendricks & Robinson, Columbia, Missouri; O. J. Mooers, Des Moines, Iowa; Morgan Horse Farm, Plainfield, Iowa; Charles Seibert, Waverly, Iowa; Allen L. Smith, Plainfield, Iowa; Wild Rose Farm, St. Charles, Illinois.

AWARDS.

JUDGE....................J. O. WILLIAMS, Ft. Collins, Colo.

Stallion, Four Years or Over—First, Allen F., 5722, Jos. C. Brunk; second, Dart, 5130, Morgan Horse Farm; third, Rupert Reade, 5758, Hendricks & Robinson; Fourth, Morgan King, 4817, E. F. Brown.

Stallion, Three Years, Under Four—First, Roy Rose, Wild Rose Farm; second, Red Ethan, 6638, Jos. C. Brunk.

Stallion, Two Years and Under Three—First, Montgomery, 6684, Morgan Horse Farm; second, Dude Seibert, 6784, Chas. Seibert; third, Toronto, 6639, Jos. C. Brunk.

Stallion, Over One Year, Under Two—First, Sentiment, Jos. C. Brunk; second, Prince of Reades, 6708, Hendricks & Robinson; third, Fenlon, H. C. Davis.

Stallion or Mare Foal—First, Jos. C. Brunk; second, Hendricks & Robinson; third, H. C. Davis.

Yeld Mare, Four Years or Over—First, Queen of Spades, Wild Rose Farm; second, Queen of Clubs, Wild Rose Farm.

Mare Over Three, Under Four—First, Primrose, Wild Rose Farm; second, Roberta, Hendricks and Robinson.

Filly Over Two, Under Three—First, Topsy Dickinson, Vol. 4, Allen L. Smith; second, Ruby Gales, H. C. Davis.

Champion Stallion—First, Allen F., 5722, Jos. C. Brunk; second, Roy Rose, Wild Rose Farm.

Champion Mare—First, Primrose, Wild Rose Farm; second, Queen of Spades, Wild Rose Farm.

Get of Stallion—First, Wild Rose Farm; second, Morgan Horse Farm.

Grand Display—First, Jos. C. Brunk.

SPECIAL PREMIUM OFFERED BY THE MORGAN HORSE CLUB.

Stallion, Mare or Gelding, Conforming Most Truly to the Ancient Morgan Type—First, Allen F. 5722, Jos. C. Brunk.

HACKNEY.

EXHIBITORS.

Crawford & Griffin, Newton, Iowa; George A. Heyl & Sons, Washington, Illinois; J. A. Knott, Winnipeg, Canada; Pabst Stock Farm, Oconomowoc, Wisconsin; J. C. Strubhar, Peoria, Illinois; V. J. Smith, Eldora, Iowa; Wild Rose Farm, St. Charles, Illinois.

AWARDS.

JUDGE....................J. O. WILLIAMS, Ft. Collins, Colo.

Stallion Four Years or Over—First, Bagthorpe Sultan, 910 (9596), Pabst Stock Farm; second, Seeham Mason, Wild Rose Farm; third, Nepture, 632 (7940), Crawford & Griffin.

Stallion Over One, Under Two—First, Lunderstone James, 1642, V. J. Smith.

Yeld Mare, Four Years or Over—First, Queen Daisy, 2022, Pabst Stock Farm; second, Sunshine, Wild Rose Farm; third, Thordine, 2019, Pabst Stock Farm.

Mare Over Three, Under Four—First, Dinarth Gem, 22911, Geo. A. Heyl; second, Dinarth Dot, 22910, Geo. A. Heyl.

Champion Stallion—First, Bagthorpe Sultan 910 (9596), Pabst Stock Farm; second, Seeham Mason, Wild Rose Farm.

Champion Mare—First, Queen Daisy, 2022, Pabst Stock Farm; second, Sunshine, Wild Rose Farm.

Grand Display—First, Pabst Stock Farm.

WELSH PONIES.

EXHIBITORS.

John Alexander, Aurora, Illinois; George A. Heyl & Sons, Washington, Illinois; T. S. Simpson & Son, Aurora, Illinois; Mrs. A. Stirling, Des Moines, Iowa.

AWARDS.

JUDGE.........................W. J. KENNEDY, Ames, Iowa.

Stallion Three Years or Over—First, Gwindy Brenuin 300, Geo. A. Heyl; second, Tip Top, 210, Jno. Alexander; third, Llewyn King, 424, Jno. Alexander.

Stallion Two Years, Under Three—First, Skylemore Prince, 576, Jno. Alexander; second, Longmynd Prince 492, Geo. A. Heyl & Son.

Stallion or Mare Foal—First, Mrs. A. Stirling; second, Forest King, Jno. Alexander; third, Royal Gwindy, Geo. A. Heyl.

Mare Three Years or Over—First, Forest Brown Queen II, 488, Jno. Alexander; second, Llewyn Bracelet, 428, Geo. A. Heyl; third, Llwyn Nun, 82 (1545), Mrs. A. Stirling.

Mare Two Years, Under Three—First, Forest Choice Cherry, 499, Jno. Alexander; second, Governess, 405, Jno. Alexander; third, Llewyn Peggy, 482, Geo. A. Heyl.

Pony in Harness—First, Gwindy Brennin, 300, Geo. A. Heyl; second, Tip Top, 210, Jno. Alexander; third, Llwyn Chief, 489, Jno. Alexander.

Pair Ponies in Harness—First, Gwindy Brennin & Daisy, Geo. A. Heyl; second Aurora Queen and mate, Jno. Alexander; third, Llewyn King & Emperor, Geo. A. Heyl.

Tandem Team—First, Gwindy Brennin & Daisy, Geo. A. Heyl; second, Llwyn Chief and Mate, Jno. Alexander; third, Tip Top and Mate, Jno. Alexander.

Pony Under Saddle—First, Foregate Polly, 429, Geo. A. Heyl; second, Black Gem, 494, Jno. Alexander; third, Llewyn Daisy, 438, Geo. A. Heyl.

SHETLAND PONIES.

EXHIBITORS.

Charles Bachman, Des Moines, Iowa; J. Hill Barnes, Oskaloosa, Iowa; Frances Culbertson, Panora, Iowa; John Donhowe, Story City, Iowa; H. C. Davis, Ames, Iowa; George A. Heyl & Son, Washington, Ill.; J. A. Knott, Winnipeg, Canada; A. E. McNabb, Jewell, Iowa; Wilmoth C. Mack, Des Moines, Iowa; Pabst Stock Farm, Oconomowoc, Wisconsin; Carl A. Rosenfeld, Kelley, Iowa; W. T. Roberts & Son, Ames, Iowa; C. F. Stewart, Des Moines, Iowa; T. S. Simpson & Sons, Aurora, Illinois; Mrs. A. Stirling, Des Moines, Iowa; Bert B. Welty, Nevada, Iowa; F. R. Wilson, Colo, Iowa.

AWARDS.

JUDGE.........................W. J. KENNEDY, Ames, Iowa.

Stallion Four Years or Over—First, King Larigo, 8778, Geo. A. Heyl & Son; second, Lord Kennedy, 8175 (349), B. B. Welty; third, Wagga Wagga, 8847, Mrs. A. Stirling; fourth, Anton, 4342, Jno. Donhowe.

Stallion Three Years, Under Four—First, Silver of Bramhope Villa, 11533, H. C. Davis; second, Neil, 11585, Mrs. A. Stirling, Des Moines; third, Juror, 11389, W. T. Roberts; fourth, Sir McDougal, 11800, Geo. A. Heyl & Son.

Stallion Two Years, Under Three—First, Don Larigo, 13250, Geo. A. Heyl & Son; second, Mc's Defender, 12811, Geo. A. Heyl & Son; third, Quickse, 12123, Mrs. A. Stirling; fourth, Kimple, 13013, W. T. Roberts & Son.

Stallion Over One, Under Two—First, Prince Larigo, Geo. A. Heyl & Son; second, Fennel, 13286, W. T. Roberts & Son; third, Tom Pollock, 13713, B. B. Welty.

Stallion or Mare Foal—First, Jimmie Kennedy, C. F. Stewart; second, Mrs. A. Stirling; third, Jno. Donhowe; fourth, Little Wren, W. T. Roberts.

Mare Four Years or Over—First, Pricilla, 12804, Geo. A. Heyl & Son; second, Clara II, 11935, Mrs. A. Stirling; third, Bell Girl, Jno. Donhowe; fourth, Black Baby, B. B. Welty.

Mare Three Years, Under Four—First, Tutsy D, Jno. Donhowe; second, Princess Larigo, 12805, Geo. A. Heyl; third, Sioux (11264), Francis Culbertson; fourth, Adlade D., 10967, H. C. Davis.

Mare Over Two, Under Three—First, Christina, 12119, Mrs. A. Stirling; second, Harum Daisy, 12812, Geo. A. Heyl & Son; third, Selma R., 12035, W. T. Roberts & Son; fourth, Josie S., 12958, Mrs. A. Stirling.

Mare Over One, Under Two—First, Belle of Edinbrae, Mrs. A. Stirling; second, Mary W., B. B. Welty; third, Sweet Marie, Carl Rosenfeld; fourth, Jennie W., 13710, B. B. Welty.

Pony in Harness—First, Anton, 4342, Jno. Donhowe; second, Lord Kennedy, 8175 (349), B. B. Welty; third, Diamond, J. A. Knott; fourth, Pearl, 8779, Geo. A. Heyl & Son.

Pair Ponies in Harness—First, King Larigo & Pearl, Geo. A. Heyl & Son; second, Tar Baby and Black Baby, B. B. Welty; third, Pricilla and Mate, Geo. A. Heyl & Son; fourth, Anton & Trusty, Jno. Donhowe.

Four-in-Hand—First, Geo. A. Heyl; second, B. B. Welty; third, Jno. Donhowe; fourth, W. T. Roberts & Son.

Tandem Team—First, King Larigo and Pearl, Geo. A. Heyl; second, Joyful and Lord Kennedy, Bert B. Welty; third, Wagga Wagga and Mate, Mrs. A. Stirling; fourth, Tutsy and Anton, Jno. Donhowe.

Pony Under Saddle—First, Pricilla, 12804, Geo. A. Heyl; second, Beauty Spot, Jno. Donhowe; third, Prince, Chas. Bachman; fourth, Dimples, Chas. Bachman.

Four Colts, Get of One Sire—First, Geo. A. Heyl & Son; second, W. T. Roberts & Son; third, H. C. Davis; fourth, W. T. Roberts & Son.

Champion Stallion, Mare or Gelding in Harness—First, King Larigo, 8778, Geo. A. Heyl & Son; second, Lord Kennedy, 8175 (349), B. B. Welty.

Grand Display—First, Geo. A. Heyl; second, Jno. Donhowe; third, Mrs. A. Stirling; fourth, W. T. Roberts & Son.

Pony in Harness (Local)—First, B. B. Welty; second, Wagga Wagga, 8847, Mrs. A. Stirling; third, Beauty Spot, Jno. Donhowe; fourth, W. T. Roberts & Son.

Pair Ponies in Harness—First, Joyful and Lord Kennedy, B. B. Welty; second, Tutsy and Anton, Jno. Donhowe; third, Juror and Folly, W. T. Roberts & Son; fourth, Tar Baby and Black Baby, B. B. Welty.

Pony Under Saddle—First, Beauty Spot, Jno. Donhowe; second, Prince, Chas. Bachman; third, Dimple, Chas. Bachman; fourth, Bell Girl, Jno. Donhowe.

PONIES OTHER THAN SHETLAND OR WELSH.

EXHIBITORS.

Jno. Alexander, Aurora, Illinois; J. M. Brown, Des Moines, Iowa; J. Hill Barnes, Oskaloosa, Iowa; Jno. Donhowe, Story City, Iowa; H. C. Davis, Ames, Iowa; Geo. A. Heyl & Son, Washington, Illinois; J. R. Peak & Sons, Winchester, Illinois; Pabst Stock Farm, Oconomowoc, Wisconsin; Mrs. A. Stirling, Des Moines, Iowa; F. R. Wilson, Colo, Iowa; Wild Rose Farm, St. Charles, Illinois.

AWARDS.

JUDGE........................WALTER PALMER, Ottawa, Ill.

Pony in Harness—First, Masterpiece, Pabst Stock Farm; second, Dinarth Gem, 22911, Geo. A. Heyl & Son; third, Dinarth Dot, 22910, Geo. A. Heyl.

Pony Under Saddle—First, Major Gans, 6683, Morgan Horse Farm; second, Fancy, J. Hill Barnes; third, Daisy, Jno. Donhowe.

Pair Ponies in Harness—First, Dinarth Dot and Dinarth Gem, Geo. A. Heyl; second, H. C. Davis; third, Dennis & Merry Tom, J. M. Brown.

Tandem Team—Dinarth Dot and Dinarth Gem, Geo. A. Heyl & Son; second, H. C. Davis; third, Dandy and Daisy, Jno. Donhowe.

Four-in-Hand—First, H. C. Davis.

MULES.

EXHIBITORS.

Thos. Bass, Mexico, Missouri; Loren Dunbar, Earlham, Iowa; F. L. Hutson & Son, State Center, Iowa; E. R. Kindred, Prairie City, Iowa.

AWARDS.

JUDGE......................W. A. DOBSON, Des Moines, Iowa.

Mule Four Years or Over—First, Snowball, F. L. Hutson & Son; second, Mag, F. L. Hutson & Son; third, Suse, E. R. Kindred; fourth, Mollie, F. L. Hutson & Son.

Mule Over Three, Under Four—First, F. L. Hutson.

Mule Over Two, Under Three—First, Queen, F. L. Hutson; second, Daisy, F. L. Hutson; third, Lizzie, F. L. Hutson.

Mule Over One, Under Two—First, Moulder, F. L. Hutson & Son; second, Mary, F. L. Hutson; third, Maud, F. L. Hutson.

Pair Mules Over 2400 lbs.—First, Snowball and Ruth, F. L. Hutson & Son; second, Mag and Mollie, F. L. Hutson & Son; third, Suse and Molly, E. R. Kindred.

Pair Mules Under 2400 lbs.—First, F. L. Hutson & Son.

Five Mules of Any Age—First, F. L. Hutson & Son.

Champion Mule Any Age—Snowball, F. L. Hutson; second, F. L. Hutson.

Champion Pair of Mules Any Age—First, Snowball and Ruth, F. L. Hutson & Son; second, Mag and Mollie, F. L. Hutson & Son.

JACKS.

EXHIBITORS.

W. L. DeClow, Cedar Rapids, Iowa; Deierling & Otto, Queen City, Missouri; Thos. King, Winterset, Iowa; Geo. H. Stultz, Winterset, Iowa; T. R. Young, Richland, Iowa.

AWARDS.

JUDGE......................W. A. DOBSON, Des Moines, Iowa.

Jack Three Years and Over—First, London, Deierling & Otto; second, Grand, Deierling & Otto; third, Missouri Giant, Deierling & Otto; fourth, Billy Bryan, 4473, Geo. H. Stultz.

Jack Two Years and Under Three—First, Deierling's Lightning, Deierling & Otto; second, Searchlight, Deierling & Otto; third, Senator 2nd, Deierling & Otto.

Grand Display—First, Deierling & Otto; second, Deierling & Otto.

CATTLE DEPARTMENT.

SUPERINTENDENT.................H. L. PIKE, Whiting, Iowa.

SHORT HORNS.

EXHIBITORS.

Anoka Farms, Waukesha, Wisconsin; G. H. Burge, Mt. Vernon, Iowa; Carpenter and Carpenter, Baraboo, Wisconsin; F. H. Ehlers, Tama, Iowa; W. E. Graham, Prairie City, Iowa; C. B. Grimes, Winnebago, Minnesota; Wm. Herkelmann, Elwood, Iowa; Leemon Stock Farm, Hoopeston, Illinois; C. L. McClellan, Lowden, Iowa; H. G. McMillan & Sons, Rock Rapids, Iowa; J. H. Miller, Peru, Indiana; C. F. Mitchell & Son, Farragut, Iowa; L. C. Oloff, Ireton, Iowa; C. A. Saunders, Manilla, Iowa; Carl Sparboe, Ellsworth, Iowa; I. J. Swain & Sons, Malvern, Iowa; W. W. Vaughn, Marion, Iowa; J. G. Westrope, Harlan, Iowa; W. A. Wickersham, Melbourne, Iowa.

AWARDS.

JUDGE..................T. E. ROBSON, London, Ont., Canada.

Bull Three Years or Over—First, Sultan Mine, 320273, Carpenter and Carpenter; second, Lochin Dale, 334951, Leemon Stock Farm; third, Fair Knight 2nd, 350285, H. G. McMillan & Sons.

Bull Two Years, Under Three—First, Gloster Fashion, 350512, Anoka Farms; second, Silver Sultan, 353640, G. H. Burge; third, True Cumberland 3rd, 353220, Wm. Herkelmann; fourth, Village Baronett, 354063, Carpenter and Carpenter; fifth, Village Marshall, 382307, Carl Sparboe.

Bull, Senior Yearling—First, Pride of Elm Lawn, 367021, L. C. Oloff; second, Golden Hampton, 365697, Wm. Herkelmann; third, Scottish Rex, 370101, J. G. Westrope; fourth, Cardinal, 366024, C. B. Grimes.

Bull, Junior Yearling—First, Crusader, G. H. Burge; second, Wildwood, Sultan, 387390, W. W. Vaughn; third, Fairview Sultan, 368100, F. H. Ehlers; fourth, March Premier, 368056, H. G. McMillan & Sons; fifth, Ceremonious Victor, 384143, C. L. McClellan; sixth, Ceremonious Victor, 380163, Wm. Herkelmann; seventh, Glorious Count, 384145, C. L. McClellan.

Bull, Senior Calf—First, Cumberland's Type, C. A. Saunders; second, Cumberland Again, C. A. Saunders; third, Scotch King, 38704, W. E. Graham; fourth, Royal Silver, 387283, Anoka Farms; fifth, Merry Victor, 384147, C. L. McClellan; sixth, Collynie Dale, 387631, Carpenter and Carpenter; seventh, Cromwell, G. H. Burge.

Bull, Junior Calf—First, Double Sultan, J. H. Miller; second, Marquis Cumberland, C. A. Saunders; third, Victor of Wayside 4th, G. H. Burge; fourth, Lakewood Knight, 377491, H. G. McMillan & Sons; fifth, Clipper Crest, Anoka Farms; sixth, Count Lovat, C. B. Grimes; seventh, Sultan's Goods, 387396, Wm. Herkelmann.

Cow Three Years or Over—First, Dale's Gift, 41150, Carpenter and Carpenter; second, Queen of the Grove, Vol. 68, I. J. Swain & Sons; third, Royal Queen 5th, 88196, F. H. Ehlers.

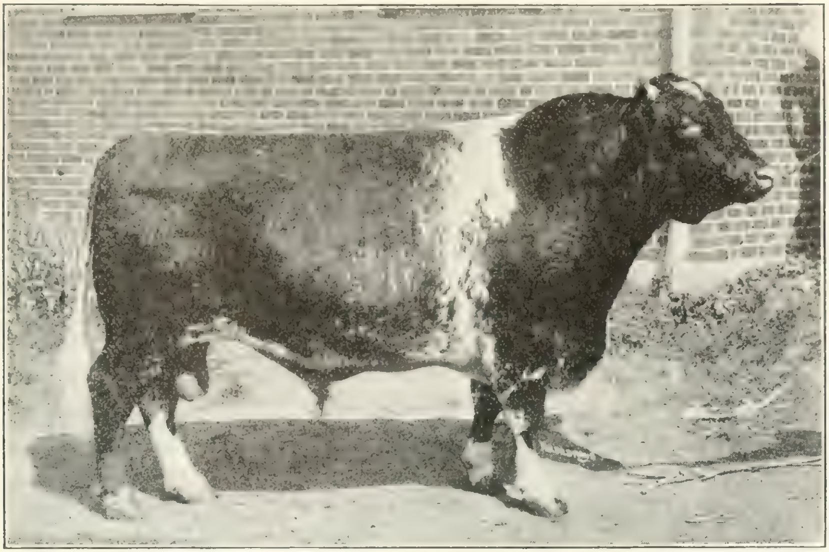
Heifer Two Years, Under Three—First, Maxwalton Missie 2nd, 107208, Anoka Farms; second, Mildred of Oakland, 101856, Wm. Herkelmann; third, Dale's Gift 4th, 107198, Carpenter and Carpenter; fourth, Maxwalton Beauty, 107204, Carpenter and Carpenter; fifth, Bonnie Cumberland 4th, 107932, I. J. Swain & Sons; sixth, Mayflower 6th, 101855, H. G. McMillan & Sons; seventh, Orange Choice, 108741, F. H. Ehlers.

Heifer, Senior Yearling—First, Susie Cumberland 3rd, C. A. Saunders; second, Duchess of Gloster, 127621, Anoka Farms; third, British Countess, 126927, C. B. Grimes; fourth, Dale's Dorothy, 217602, Carpenter and Carpenter; fifth, Miss Missie, 124891, Wm. Herkelmann; sixth, Village Victoria, F. H. Ehlers; seventh, 81st Duchess of Gloster, C. A. Saunders.

Heifer, Junior Yearling—First, Village Flower 2nd, 127923, Anoka Farms; second, Ruby Goods, 127874, Wm. Herkelmann; third, Collynie Marie, 149024, Carpenter and Carpenter; fourth, Queen of the Goods, I. J. Swain & Sons; fifth, Missie 3rd, 125641, Wm. Herkelmann; sixth, Athene Fashion, 152320, Anoka Farms; seventh, Bonnie Cumberland 8th, I. J. Swain & Sons.

Heifer, Senior Calf—First, Augusta 112th, 152321, Anoka Farms; second, Silver Mysie, G. H. Burge; third, Waycross Best, 189053, W. A. Wickersham; fourth, Lady Cumberland 2nd, C. A. Saunders; fifth, Waycross Lady, 149054, W. A. Wickersham; sixth, Fairview Foxglove 3rd, F. H. Ehlers; seventh, Village Mystic, 141640, Carpenter and Carpenter.

Heifer, Junior Calf—First, Fair Beauty, 139199, H. G. McMillan & Sons; second, Fond Fanny, 152325, Anoka Farms; third, Flower Girl 3rd, Anoka Farms; fourth, Fairview Maid, F. H. Ehlers; fifth, Scotch Lady, 149055, W. E. Graham; sixth, Good Princess, 152455, Wm. Herkelmann; seventh, Orange Flower 3rd, G. H. Burge.



Grand Champion Short-Horn Bull, Sultan Mine, 1913 Iowa State Fair and Exposition, owned by Carpenter and Carpenter, Baraboo, Wis.

Champion Bull Two Years or Over—Sultan Mine, 320273, Carpenter and Carpenter.

Champion Bull, Under Two Years—Cumberland's Type, C. A. Saunders.

Champion Cow Two Years or Over—Maxwalton Missie 2nd, 107208, Anoka Farms.

Champion Heifer, Under Two Years—Village Flower 2nd, 127923, Anoka Farms.

Grand Champion Bull Any Age—Sultan Mine, 320273, Carpenter and Carpenter.

Grand Champion Cow or Heifer Any Age—Village Flower 2nd, 127923, Anoka Farms.

Graded Herd—First, Anoka Farms; second, Carpenter & Carpenter; third, Wm. Herkelmann; fourth, H. G. McMillan & Sons.

Young Herd—First, C. A. Saunders; second, Anoka Farms; third, H. G. McMillan & Sons; fourth, C. B. Grimes; fifth, I. J. Swain & Sons; sixth, F. H. Ehlers.

Calf Herd—First, C. A. Saunders; second, G. H. Burge; third, Anoka Farms; fourth, H. G. McMillan & Sons; fifth, I. J. Swain & Sons; sixth, L. C. Oloff.

Get of Sire—First, Carpenter & Carpenter; second, C. A. Saunders; third, Carpenter & Carpenter; fourth, Anoka Farms; fifth, C. L. McClellan; sixth, G. H. Burge.

Produce of Cow—First, Carpenter & Carpenter; second, Anoka Farms; third, F. H. Ehlers; fourth, I. J. Swain & Sons; fifth, L. C. Oloff; sixth, Wm. Herkelmann.

DAIRY SHORT-HORNS.

Cow, Three Years or Over—First, Golden Sempstress, 28302, C. A. Saunders.

IOWA SHORT-HORN SPECIALS.

Bull, Three Years or Over—First, Fair Knight 2d, 350285, H. G. McMillan & Sons.

Bull, Two Years, Under Three—First, Silver Sultan, 353540, G. H. Burge; second, True Cumberland 3d, 353220, Wm. Herkelmann; third, Village Marshall, 382307, Carl Sparboe.

Bull, Senior Yearling—First, Pride of Elm Lawn, 367021, L. C. Oloff; second, Golden Hampton, 365697, Wm. Herkelmann; third, Scottish Rex, 370101, J. G. Westrope.

Bull, Junior Yearling—First, Crusader, G. H. Burge; second, Wildwood Sultan, 387390, W. W. Vaughn; third, Fairview Sultan, 368100, F. H. Ehlers; fourth, March Premier, 368056, H. G. McMillan & Sons; fifth, Ceremonious Victor, 384143, C. L. McClellan; sixth, Ceremonious Victor, 380163, Wm. Herkelmann; seventh, Glorious Count, 384145, C. L. McClellan.

Bull, Senior Calf—First, Cumberland's Type, C. A. Saunders; second, Cumberland Again, C. A. Saunders; third, Scotch King, 38704, W. E. Graham; fourth, Merry Victor, 384147, C. L. McClellan; fifth, Cromwell, G. H. Burge; sixth, Pine Valley Rex, J. G. Westrope; seventh, Elm Lawn Boy, 387601, L. C. Oloff.

Bull, Junior Calf—First, Marquis Cumberland, C. A. Saunders; second, Victor of Wayside 4th, G. H. Burge; third, Lakewood Knight, 377491, H. G. McMillan & Sons; fourth, Sultan's Goods, 387396, Wm. Herkelmann; fifth, Fair Lord, 377486, H. G. McMillan & Sons.

Cow, Three Years or Over—First, Queen of the Grove, Vol. 68, I. J. Swain & Sons; second, Royal Queen 5th, 88196, F. H. Ehlers.

Heifer, Two Years and Under Three—First, Mildred of Oakland, 101856, Wm. Herkelmann; second, Bonnie Cumberland 4th, 107932, I. J. Swain & Sons; third, Mayflower 6th, 101855, H. G. McMillan & Sons; fourth, Orange Choice, 108741, F. H. Ehlers; fifth, Florence, 108731, F. H. Ehlers; sixth, Lucy, 111358, F. H. Ehlers.

Heifer, Senior Yearling—First, Susie Cumberland 3d, C. A. Saunders; second, Miss Missie, 124891, Wm. Herkelmann; third, Village Victoria, F. H. Ehlers; fourth, 81st Duchess of Gloster, C. A. Saunders; fifth, I. J. Swain & Sons.

Heifer, Junior Yearling—First, Ruby Goods, 127874, Wm. Herkelmann; second, Queen of the Goods, I. J. Swain & Sons; third, Missie 3d, 125641, Wm. Herkelmann; fourth, Bonnie Cumberland 8th, C. A. Saunders; fifth, Fair Minerva, 139202, H. C. McMillan & Sons; sixth, Orange Queen, F. H. Ehlers; seventh, Butterfly Sultana, 122283, H. G. McMillan & Sons.

Heifer, Senior Calf—First, Silver Mysie, G. H. Burge; second, Waycross Lady, 149054, W. A. Wickersham; third, Lady Cumberland 2d, C. A. Saunders; fourth, Waycross Lady, 149054, W. A. Wickersham; fifth, Fairview Foxglove 3d, F. H. Ehlers; sixth, Nora Nonpareil 2d, G. H. Burge; seventh, Lady of Elm Lawn, 152617, L. C. Oloff.

Heifer, Junior Calf—First, Fair Beauty, 139199, H. G. McMillan & Sons; second, Fairview Maid, F. H. Ehlers; third, Scotch Lady, 149055, W. E. Graham; fourth, Good Princess, 152455, Wm. Herkelmann; fifth, Orange Flower 3d, G. H. Burge; sixth, Scottish Colleen, I. J. Swain & Sons; seventh, Carissima Goods, I. J. Swain & Sons.

Champion Bull, Two Years or Over—Silver Sultan, 353640, G. H. Burge.

Champion Bull, Under Two Years—Cumberland's Type, C. A. Saunders.

Champion Cow, Two Years or Over—Mildred of Oakland, 101856, Wm. Herkelmann.

Heifer, Under Two Years—Silver Mysie, G. H. Burge.

Grand Champion Bull, Any Age—Cumberland's Type, C. A. Saunders.

Cow or Heifer, Any Age—Silver Mysie, G. H. Burge.

Graded Herd—First, Wm. Herkelmann; second, H. G. McMillan & Sons.

Young Herd—First, C. A. Saunders; second, H. G. McMillan & Sons; third, I. J. Swain & Sons; fourth, F. H. Ehlers.

Calf Herd—First, C. A. Saunders; second, G. H. Burge; third, H. G. McMillan & Sons; fourth, I. J. Swain & Sons; fifth, L. C. Oloff; sixth, Wm. Herkelmann.

Get of Sire—First, C. A. Saunders; second, C. L. McClellan; third, G. H. Burge; fourth, H. G. McMillan & Sons; fifth, L. C. Oloff; sixth, F. H. Ehlers.

Produce of Cow—First, F. H. Ehlers; second, I. J. Swain & Sons; third, L. C. Oloff; fourth, Wm. Herkelmann; fifth, F. H. Ehlers; sixth, H. G. McMillan & Sons.

SPECIAL PREMIUMS OFFERED BY THE IOWA SHORT-HORN BREEDERS' ASSOCIATION.

Best Senior Bull Calf—Cumberland's Type, C. A. Saunders.

Best Junior Bull Calf—Marquis Cumberland, C. A. Saunders.

Best Senior Heifer Calf—Silver Mysie, G. H. Burge.

Best Junior Heifer Calf—Fair Beauty, 139199, H. G. McMillan & Sons.

HEREFORDS.

EXHIBITORS.

J. B. Ashby, Audubon, Iowa; E. M. Cassady, Whiting, Iowa; J. P. Cudahy, Belton, Missouri; J. M. Curtice, Kansas City, Missouri; Jesse Engle & Sons, Sheridan, Missouri; O. S. Gibbons & Sons, Atlantic, Iowa; O. Harris, Harris, Missouri; Robt. H. Hazlett, ElDorado, Kansas; E. L. Karr, Osceola, Iowa; Warren T. McCray, Kentland, Indiana; Francis Mayne, Harlan, Iowa; Cyrus A. Tow, Norway, Iowa.

AWARDS.

JUDGE..........................J. C. KINZER, Moscow, Idaho.

Bull, Three Years or Over—First, Fairfax 16th, 316931, J. P. Cudahy; second, Prince Perfection, 342054, O. Harris; third, Don Perfect, 400000, J. M. Curtice; fourth, Byron Fairfax, 344282, Cyrus A. Tow; fifth, Good Lad, 343996, O. S. Gibbons & Son.

Bull, Two Years, Under Three—First, Beau Fairfax, 368360, J. P. Cudahy; second, Protector Fairfax, 361812, Warren T. McCray; third, Beau Protector, 363733, E. L. Karr.

Bull, Senior Yearling—First, Repeater 7th, 386905, O. Harris; second, Gay Lad 9th, 386873, O. Harris; third, Perfect Donald, 400001, J. M. Curtice; fourth, Crusader Fairfax, 388813, J. P. Cudahy; fifth, Golden Lad, 381477, E. M. Cassady.

Bull, Junior Yearling—First, Fairview Prince, 388031, Cyrus A. Tow; second, Gay Lad 12th, 395804, O. Harris; third, Carlo, 400893, J. P. Cudahy; fourth, Beau Blanchard 2d, 410108, Jesse Engle & Sons; fifth, Beau General 6th, 391948, O. S. Gibbons & Son; sixth, Standard 6th, 388742, Cyrus A. Tow; seventh, Howard Fairfax, 399358, Warren T. McCray.

Bull, Senior Calf—First, Donald Perfect, 427489, J. M. Curtice; second, King Fairfax, 414471, Warren T. McCray; third, Beau General 8th, 410703, O. S. Gibbons & Son; fourth, Lethan Fairfax, 414471, Warren T. McCray; fifth, Gay Lad 16th, 412192, O. Harris; sixth, Distinction 2d, 411212, Cyrus A. Tow; seventh, Dictator Fairfax, 427505, J. P. Cudahy.

Bull, Junior Calf—First, Shamrock, 427491, J. M. Curtice; second, Disturber Jr., 424253, Cyrus A. Tow; third, Cragdarragh 4th, 427503, J. P. Cudahy; fourth, Distinction 4th, 424254, Cyrus A. Tow; fifth, Beau Perfect 10th, 427492, J. M. Curtice; sixth, Gay Lad 23d, 424991, O. Harris; seventh, Carlos Blanchard, 426573, Jesse Engle & Sons.

Cow, Three Years or Over—First, Perfection Lass, 342053, J. P. Cudahy; second, Nora Fairfax, 344290, Warren T. McCray; third, Disturber's Lassie 4th, 349142, O. Harris; fourth, Miss Brea 29th, 342899, Cyrus A. Tow; fifth, Pansy Belle 2d, 292652, O. S. Gibbons & Son.

Heifer, Two Years, Under Three—First, Harris Princess, 215, 359358, O. Harris; second, Defender's Lassie 2d, 385300, Cyrus A. Tow; third, Virginia Fairfax, 363557, Warren T. McCray; fourth, Donna Perfect 9th, 386353, J. M. Curtice; fifth, Celandine 2d, 371605, J. P. Cudahy; sixth, Miss P. Fairfax, 369685, J. P. Cudahy; seventh, Disturber's Lassie 5th, 369627, O. Harris.

Heifer, Senior Yearling—First, Joan Fairfax, 388823, Warren T. McCray; second, Disturber's Lassie 6th, 388029, Cyrus A. Tow; third, Pearl Donald, 396760, J. P. Cudahy; fourth, Miss Gay Lad 7th, 386871, O. Harris; fifth, Donna Perfect 4th, 386508, J. M. Curtice; sixth, Anna Donald, 397699, J. P. Cudahy; seventh, Don Anna, 381472, E. M. Cassady.

Heifer, Junior Yearling—First, Miss Repeater 11th, 395824, O. Harris; second, Gertrude Fairfax, 388822, Warren T. McCray; third, Disturber's Lassie 7th, 398248, Cyrus A. Tow; fourth, Alice Fairfax, 396755, J. P. Cudahy; fifth, Donna Perfect 6th, 386582, J. M. Curtice; sixth, Claremont Pet, 39784, J. B. Ashby; seventh, Graceful 5th, 410117, Jesse Engle & Sons.

Heifer, Senior Calf—First, Patra Fairfax, 414480, Warren T. McCray; second, Lady Standard, 411218, Cyrus A. Tow; third, Coral Perfect, 427494, J. M. Curtice; fourth, Teresa Donald, 427509, J. P. Cudahy; fifth, Miss Gay Lad 15th, 412205, O. Harris; sixth, Disturber's Lassie 9th, 411216, Cyrus A. Tow; seventh, Miss Gay Lad 15th, 412204, O. Harris.

Heifer, Junior Calf—First, Primrose, 427506, J. P. Cudahy; second, Lovely Fairfax, 425483, Warren T. McCray; third, Silvie Donald, 427497,

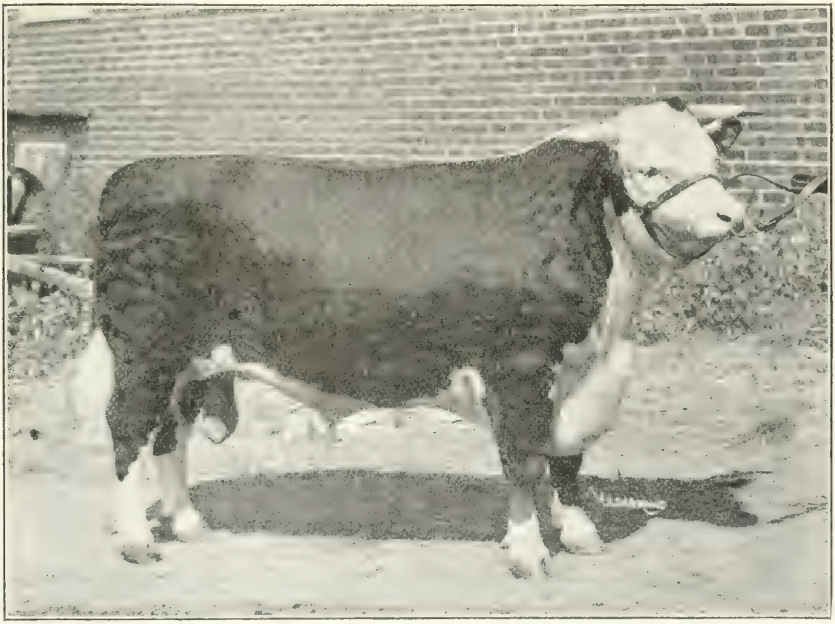
J. M. Curtice; fourth, Miss Perfection 6th, 426312, O. Harris; fifth, Royal Lady 4th, 427508, J. P. Cudahy; sixth, Lady Excelence, 426579, Jesse Engle & Sons; seventh, Goldie Donald, 427496, J. M. Curtice.

Champion Bull, Two Years or Over—Fairfax 16th, 316931, J. P. Cudahy.

Champion Bull, Under Two Years—Repeater 7th, 386905, O. Harris.

Champion Cow, Two Years or Over—Perfection Lass, 342053, J. P. Cudahy.

Champion Heifer, Under Two Years—Miss Repeater 11th, 395824, O. Harris.



Grand Champion Hereford Bull, Repeater 7th, 1913 Iowa State Fair and Exposition, owned by O. Harris, Harris, Mo.

Grand Champion Bull, Any Age—Repeater 7th, 386905, O. Harris.

Grand Champion Cow or Heifer, Any Age—Perfection Lass, 242053, J. P. Cudahy.

Graded Herd—First, O. Harris; second, Warren T. McCray; third, J. P. Cudahy; fourth, Cyrus A. Tow; fifth, O. S. Gibbons & Son.

Young Herd—First, O. Harris; second, Warren T. McCray; third, Cyrus A. Tow; fourth, J. M. Curtice; fifth, J. P. Cudahy; sixth, O. S. Gibbons & Son; seventh, Jesse Engle & Sons.

Calf Herd—First, Warren T. McCray; second, Cyrus A. Tow; third, J. M. Curtice; fourth, J. P. Cudahy; fifth, O. Harris; sixth, O. S. Gibbons & Son; seventh, Jesse Engle & Sons.

Get of Sire—First, Warren T. McCray; second, O. Harris; third, J. M. Curtice; fourth, Cyrus A. Tow; fifth, J. P. Cudahy; sixth, O. S. Gibbons & Son; seventh, Jesse Engle & Sons.

Produce of Cow—First, O. Harris; second, Warren T. McCray; third, O. Harris; fourth, Warren T. McCray; fifth, J. M. Curtice; sixth, O. S. Gibbons & Son; seventh, J. B. Ashby.

IOWA HEREFORD SPECIALS.

Bull, Three Years or Over—First, Byron Fairfax, 344282, Cyrus A. Tow; second, Good Lad, 343996, O. S. Gibbons & Son.

Bull, Two Years and Under Three—First, Beau Protector, 363733, E. L. Karr.

Bull, Senior Yearling—First, Golden Lad, 381477, E. M. Cassady.

Bull, Junior Yearling—First, Fairview Prince, 388031, Cyrus A. Tow; second, Beau General 6th, 391948, O. S. Gibbons & Son; third, Standard 6th, 388742, Cyrus A. Tow; fourth, William, 394439, E. M. Cassady.

Bull, Senior Calf—First, Beau General 8th, 410073, O. S. Gibbons; second, Distinction 2d, 411212, Cyrus A. Tow; third, Standard 11th, 411222, Cyrus A. Tow; fourth, O. S. Gibbons & Son; fifth, Claremont Prince, 625832, J. B. Ashby.

Bull, Junior Calf—First, Disturber Jr., 424253, Cyrus A. Tow; second, Distinction 4th, 424254, Cyrus A. Tow; third, Beau General 12th, 421374, O. S. Gibbons & Son; fourth, Ormond, 625826, J. B. Ashby.

Cow Three Years or Over—First, Miss Brea 29th, 342899, Cyrus A. Tow; second, Pansy Belle 2d, 292652, O. S. Gibbons & Son.

Heifer Two Years, Under Three—First, Defender's Lassie 2d, 385300, Cyrus A. Tow; second, Pansy Bell 4th, 364248, O. S. Gibbons & Son; third, Adelaide, 380917, E. L. Karr.

Heifer, Senior Yearling—First, Disturber's Lassie 6th, 388029, Cyrus A. Tow; second, Don Anna, 381472, E. M. Cassady; third, Beauty, 388252, E. M. Cassady; fourth, Delight, 380918, E. L. Karr.

Heifer, Junior Yearling—First, Disturber's Lassie 7th, 398248, Cyrus A. Tow; second, Claremont Pet, 39784, J. B. Ashby; third, Disturber's Lassie 8th, 198249, Cyrus A. Tow; fourth, Priscilline, 391950, O. S. Gibbons & Son; fifth, Beau Lady, 410701, O. S. Gibbons & Son; sixth, Dell, 400980, E. L. Karr.

Heifer, Senior Calf—First, Lady Standard, 411218, Cyrus A. Tow; second, Disturber's Lassie 9th, 411216, Cyrus A. Tow; third, Good Lady, 410706, O. S. Gibbons & Son; fourth, Miss General 2d, 421378, O. S. Gibbons & Son; fifth, Lassie, 404719, E. M. Cassady; sixth, Flora II, 404717, E. M. Cassady.

Heifer, Junior Calf—First, Golden Lass, 422624, E. M. Cassady.

Champion Bull, Two Years or Over—Byron Fairfax, 344282, Cyrus A. Tow.

Champion Bull, Under Two Years—Fairview Prince, 388031, Cyrus. A. Tow.

Champion Cow, Two Years or Over—Defender's Lassie 2d, 385300, Cyrus A. Tow.

Champion Heifer, Under Two Years—Disturber's Lassie 7th, 398248, Cyrus A. Tow.

Grand Champion Bull, Any Age—Fairview Prince, 388031, Cyrus A. Tow.

Grand Champion Cow or Heifer Any Age—Disturber's Lassie 7th, 398248, Cyrus A. Tow.

Graded Herd—First, Cyrus A. Tow; second, O. S. Gibbons.

Young Herd—First, Cyrus A. Tow; second, O. S. Gibbons & Son, third, E. M. Cassady.

Calf Herd—First, Cyrus A. Tow; second, O. S. Gibbons & Son; third, J. B. Ashby.

Get of Sire—First, Cyrus A. Tow; second, O. S. Gibbons & Son; third, J. B. Ashby; fourth, E. M. Cassady.

Produce of Cow—First, O. S. Gibbons & Son; second, J. B. Ashby; third, O. S. Gibbons & Son; fourth, E. L. Karr; fifth, E. M. Cassady.

ABERDEEN-ANGUS.

EXHIBITORS.

R. M. Anderson & Sons, Newell, Iowa; Wm. Austin, Dumont, Iowa; Otto V. Battles, Maquoketa, Iowa; A. C. Binnie, Alta, Iowa; C. D. & E. F. Caldwell, Burlington Junction, Missouri; W. F. Desenberg, Norwalk, Iowa; Chas. Escher, Jr., Botna, Iowa; W. A. McHenry, Denison, Iowa; W. J. Miller, Newton, Iowa; H. H. Reed, Marengo, Iowa; Roberts & Williams, Atlantic, Iowa; Carl A. Rosenfeld, Kelley, Iowa.

AWARDS.

JUDGE........................E. T. DAVIS, Iowa City, Iowa.

Bull, Three Years or Over—First, Erwin C., 136625, W. A. McHenry; second, Balmont, 130477, Otto V. Battles; third, Kloman, 135617, A. C. Binnie; fourth, Delver, 130446, W. J. Miller; fifth, Black Emerald, 130541, H. H. Reed.

Bull, Two Years, Under Three—First, Prince Felzer, 156700, Chas. Escher, Jr.; second, Eileen Lad of Rosemere, 149926, Otto V. Battles; third, Kiahoga, 150488, C. D. & E. F. Caldwell; fourth, Rosegay 6th, 142883, W. J. Miller; fifth, Enos 3d, 150053, R. M. Anderson & Sons.

Bull, Senior Yearling—First, Ebony of A. 3d, 155736, C. D. & E. F. Caldwell; second, Provo 2d, 160575, R. M. Anderson & Sons; third, Quality Prince 2d, 158963, W. A. McHenry; fourth, Ben Hur, 135500, R. M. Anderson & Sons.

Bull, Junior Yearling—First, Enright, 167573, Chas. Escher, Jr.; second, King Gay 3d, 166522, Carl A. Rosenfeld; third, Enus 4th, 160576, R. M. Anderson & Sons; fourth, Quartermaster Ito, 162429, C. D. & E. F. Caldwell; fifth, Pride's Lad of Rosemere, 169484, Otto V. Battles; sixth, Heatherdale Echo, 161951, R. M. Anderson & Sons; seventh, Captain Korns, 164844, W. J. Miller.

Bull, Senior Calf—First, Blackcap Star, 166902, C. D. & E. F. Caldwell; second, Kemp, A. C. Binnie; third, Prince of Elchies, 168123, R. M. Anderson & Sons; fourth, Eclipser of Rosemere, 169487, Otto V. Battles; fifth, Ebony of A. 5th, 166900, C. D. & E. F. Caldwell; sixth, Bruister of Denison, 168866, W. A. McHenry; seventh, King Earl, 167620, Chas, Escher, Jr.

Bull, Junior Calf—First, Lord Melornese, 168126, R. M. Anderson & Sons; second, Eraman 3d, A. C. Binnie; third, Marguerite's Lad 2d, 169490, Otto V. Battles; fourth, Everblack 2d, W. J. Miller; fifth, Norwalk Black Baron, 170877, W. F. Desenberg.

Cow, Three Years or Over—First, Blackcap McHenry 88th, 138394, W. A. McHenry; second, Thickset Myra, 129083, Otto V. Battles; third, Pride of Blackston 3d, 139639, R. M. Anderson & Sons; fourth, Blackbird Perfection 2d, 93788, Chas. Escher, Jr.; fifth, Barbara Woodson 2d, 139901, W. J. Miller; sixth, Eileen of Alta, 129498, A. C. Binnie; seventh, Queen Mother Johnson 5th, 130420, C. D. & E. F. Caldwell.

Heifer, Two Years, Under Three—First, Coquette McHenry 37th, 149391, W. A. McHenry; second, Pride McHenry 100th, 149362, W. A. McHenry; third, Myra of Rosemere, 149922, Otto V. Battles; fourth, Blackbird Chloe, 149977, C. D. & E. F. Caldwell; fifth, Pround Formera 3d, 150181, A. C. Binnie; sixth, Key of Indianapolis 4th, 150048, R. M. Anderson & Sons; seventh, Katy Kamura 2d, 150410, W. J. Miller.

Heifer, Senior Yearling—First, Queen of Rosemere 2d, 169483, Otto V. Battles; second, Pride McHenry 109th, 158598, W. A. McHenry; third, Erito C., 162450, C. D. & E. F. Caldwell; fourth, Pride McHenry 108th, 158956, W. A. McHenry; fifth, Ebba, 155572, Chas. Escher, Jr.; sixth, Kinova of Alta 2d, 161925, A. C. Binnie; seventh, Esthonia 6th, 162416, C. D. & E. F. Caldwell.

Heifer, Junior Yearling—First, Black Favorite of Rosemere, 159326, Otto V. Battles; second, Pridetta 2d, Chas. Escher, Jr.; third, Jilt 67th, 160577, R. M. Anderson & Sons; fourth, Blackcap of Alta 6th, 159960, A. C. Binnie; fifth, Pride McHenry 114th, 158979, W. A. McHenry; sixth, Erin's Pride 2d, 160124, W. J. Miller; seventh, Pride of Newell 3d, 168076, R. M. Anderson & Sons.

Heifer, Senior Calf—First, Eulima, 168124, R. M. Anderson & Sons; second, Pride McHenry 116th, 168855, W. A. McHenry; third, Envious Maiden, 167605, Chas. Escher, Jr.; fourth, Black Lassie of Rosemere 2d, 169488, Otto V. Batles; fifth, Jessie Blackeyes, 162448, C. D. & E. F. Caldwell; sixth, Queen McHenry 58th, 168864, W. A. McHenry; seventh, Erica of A., 166901, W. F. Desenberg.

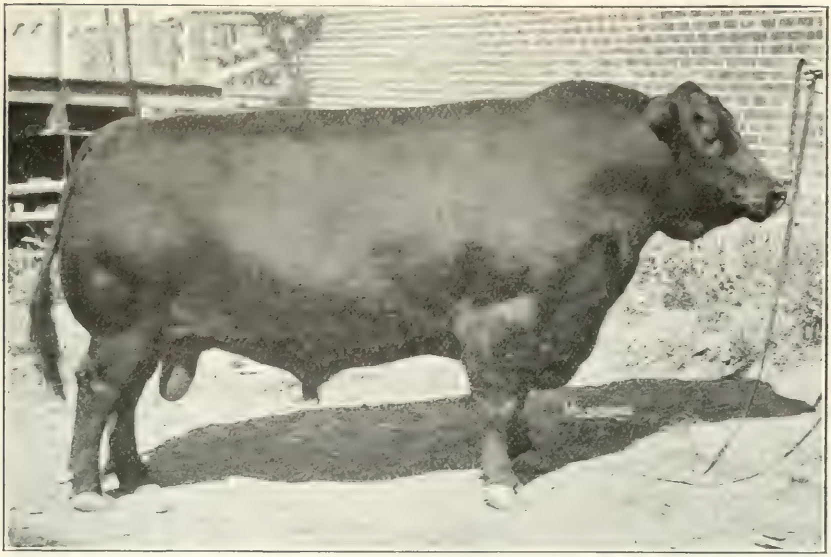
Heifer, Junior Calf—First, Blueblood Lady 3d, 168533, Chas. Escher, Jr.; second, Jilt, 168136, R. M. Anderson & Sons; third, Pride of Rosemere 5th, 169489, Otto V. Battles; fourth Blackcap of Alta 7th, A. C. Binnie; fifth, Ridgelawn Katy, W. J. Miller; sixth, Pridecap Lady 2d, C. D. & E. F. Caldwell; seventh, Erica Maid, H. H. Reed.

Champion Bull, Two Years or Over—Erwin C., 136625, W. A. McHenry.

Champion Bull, Under Two Years—Ebony of A. 3d, 155736, C. D. & E. F. Caldwell.

Champion Cow, Two Years or Over—Blackcap McHenry 88th, 138394, W. A. McHenry.

Champion Heifer, Under Two Years—Queen of Rosemere 2d, 169483, Otto V. Battles.



Grand Champion Aberdeen Angus Bull, Erwin C, 1913 Iowa State Fair and Exposition, owned by W. A. McHenry, Denison, Iowa.

Grand Champion Bull, Any Age—Erwin C., 136625, W. A. McHenry.

Grand Champion Cow or Heifer, Any Age—Blackcap McHenry 88th, 138394, W. A. McHenry.

Graded Herd—First, W. A. McHenry; second, Otto V. Battles; third, R. M. Anderson & Sons; fourth, C. D. & E. F. Caldwell; fifth, A. C. Binnie; sixth, W. J. Miller.

Young Herd—First, Chas. Escher, Jr.; second, Otto V. Battles; third, W. A. McHenry; fourth, R. M. Anderson & Sons; fifth, A. C. Binnie; sixth, W. J. Miller.

Calf Herd—First, R. M. Anderson & Sons; second, Chas. Escher, Jr.; third, Otto V. Battles; fourth, W. A. McHenry; fifth, C. D. & E. F. Caldwell; sixth, A. C. Binnie; seventh, W. J. Miller.

Get of Sire—First, Otto V. Battles; second, R. M. Anderson; third, W. A. McHenry; fourth, C. D. & E. F. Caldwell; fifth, A. C. Binnie.

Produce of Cow—First, Otto V. Battles; second, C. D. & E. F. Caldwell; third, Chas. Escher, Jr.; fourth, R. M. Anderson & Sons; fifth, W. A. McHenry; sixth, A. C. Binnie; seventh, C. D. & E. F. Caldwell.

GALLOWAY.

EXHIBITORS.

Capital View Ranch, Silver Lake, Kansas; S. M. Croft & Sons, Bluff City, Kansas; C. S. Hechtner, Chariton, Iowa; A. O. Huff, Arcadia, Nebr.

AWARDS.

JUDGE....................CHAS. ESCHER, JR., Botna, Iowa.

Bull, Three Years or Over—First, Fearnot of Maple, 35166, C. S. Hechtner; second, Kingsley, 11130, S. M. Croft & Sons; third, Carnot, 36058, Capital View Ranch.

Bull, Two Years, Under Three—First, Casino, 36410, Capital View Ranch; second, Prince Favorite, 36212, C. S. Hechtner; third, Midnight Signet, 36593, S. M. Croft & Sons.

Bull, Senior Yearling—First, Minnie's Favorite, 36544, C. S. Hechtner.

Bull, Junior Yearling—First, Iva's Favorite, 36745, C. S. Hechtner; second, Pilotte of Capital View, 38181, Capital View Ranch; third, June of Capital View, 38143, Capital View Ranch; fourth, Prince George, Jr., 37906, S. M. Croft & Sons.

Bull, Senior Calf—First, Minnie's Favorite 2d, 37634, C. S. Hechtner; second, Echo of Capital View, 38165, Capital View Ranch; third, Pioneer of Capital View, 38188, Capital View Ranch; fourth, Ben, 38285, S. M. Croft & Sons.

Bull, Junior Calf—First, Abbie's Favorite, C. S. Hechtner; second, Havard, 38306, S. M. Croft & Son; third, Joe of Bluff City, 38283, S. M. Croft & Son.

Cow Three Years or Over—First, Daisy Dimple, 35187, Capital View Ranch; second, Florence of Meadow Lawn, 32316, S. M. Croft & Son; third, Carefull of Maples 3d, 36211, C. S. Hechtner.

Heifer Two Years, Under Three—First, Nellie Mellville, 36223, Capital View Ranch; second, Lady Sampson, 36216, C. S. Hechtner; third, Clara of Maples 3d, 36214, S. M. Croft & Son.

Heifer, Senior Yearling—First, Lassie 2d of Maples, C. S. Hechtner; second, Abbie's Queen, 36543, C. S. Hechtner; third, Ethel of Greenbush, 37363, S. M. Croft & Son.

Heifer, Junior Yearling—First, Clara of Maples 4th, 37446, C. S. Hechtner; second, Ollie of Greenbush, 37362, S. M. Croft & Son; third, Captain Bell, 37977, Capital View Ranch; fourth, Gretchen of B. C., 37480, S. M. Croft & Son; fifth, Capital Perfection, 37480, Capital View Ranch.

Heifer, Senior Calf—First, Cora of Greenbush, 38289, S. M. Croft & Son; second, Sunflower Maid of C. V., 38152, Capital View Ranch; third, Favorite's Ila, 37632, C. S. Hechtner.

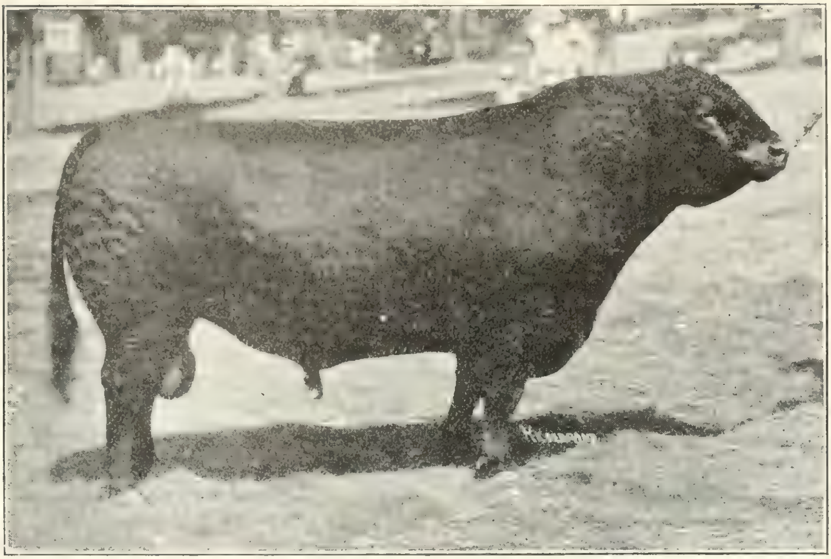
Heifer, Junior Calf—First, Snap of Maples, C. S. Hechtner; second, Floss of Bluff City, 38288, S. M. Croft & Son; third, Mayflower of C. V. 38263, Capital View Ranch.

Champion Bull, Two Years Old or Over—Fearnot of Maple, 35166, C. S. Hechtner.

Champion Bull, Under Two Years—Iva's Favorite, 36745, C. S. Hechtner.

Champion Cow, Two Years or Over—Daisy Dimple, 35187, Capital View Ranch.

Champion Heifer, Under Two Years—Lassie 2d of Maples, C. S. Hechtner.



Grand Champion Galloway Bull, Fearnot of Maple, 1913 Iowa State Fair and Exposition, owned by C. S. Hecktner, Chariton, Iowa.

Grand Champion Bull, Any Age—Fearnot of Maple, 35166, C. S. Hechtner.

Grand Champion Cow or Heifer, Any Age—Daisy Dimple, 35187, Capital View Ranch.

Graded Herd—First, Capital View Ranch; second, C. S. Hechtner; third, S. M. Croft & Sons.

Young Herd—First, C. S. Hechtner; second, S. M. Croft & Sons.

Calf Herd—First, C. S. Hechtner; second, S. M. Croft & Sons; third, Capital View Ranch.

Get of Sire—First, Capital View Ranch; second, C. S. Hechtner; third, C. S. Hechtner; fourth, S. M. Croft & Son; fifth, S. M. Croft & Son.

Produce of Cow—First, Capital View Ranch; second, C. S. Hechtner; third, C. S. Hechtner, fourth, C. S. Hechtner; fifth, S. M. Croft & Son.

POLLED DURHAM.

EXHIBITORS.

Achenbach Bros., Washington, Kansas; Leemon Stock Farm, Hoopeston, Illinois; J. H. Miller, Peru, Indiana.

AWARDS.

JUDGE..........................S. G. SHAVER, Kalona, Iowa.

Bull, Three Years or Over—First, Sultan's Creed, 353694, J. H. Miller.

Bull, Two Years and Under Three—First, Meadow Sultan, 353690, Achenbach Bros.

Bull, Senior Yearling—First, Field Marshall 3d, 368284, Leemon Stock Farm.

Bull, Junior Yearling—First Baron Exception, 367390, Achenbach Bros.

Bull, Senior Calf—First, Sultan Serene, J. H. Miller; second Loch Lochy, Leemon Stock Farm; third, Choice, Achenbach Bros.

Bull, Junior Calf—First, Loch Lee Dale, Leemon Stock Farm; second, Intense Sultan, J. H. Miller.

Cow, Three Years or Over—First, Lady Craven, 68618, J. H. Miller.

Heifer, Two Years, Under Three—First, Thankful Martha, 107930, Achenbach Bros.; second, Capacious Sultana, 132803, J. H. Miller.

Heifer, Senior Yearling—First, Lady Fairheart, 132807, J. H. Miller; second, Minute 2d, 120051, Achenbach Bros.

Heifer, Junior Yearling—First, Loch Dale Roanette, Leemon Stock Farm; second, 27th Miami Victoria, J. H. Miller; third, Loch Dale Victoria 4th, Leemon Stock Farm; fourth, The Baroness, 127374, Achenbach Bros.

Heifer, Senior Calf—First, Sultana, 149186, Achenbach Bros.; second, Clarice Sultana, J. H. Miller; third, Loch Dale Mayflower, Leemon Stock Farm; fourth, Loch Dale Victoria 5th, Leemon Stock Farm.

Heifer, Junior Calf—First, 28th Miami Victoria, J. H. Miller; second, Minute 3d, 149184, Achenbach Bros.; third, Sultana Kora, 149187, Achenbach Bros.; fourth, Loch Dale Victoria 5th, Leemon Stock Farm.

Champion Bull, Two Years Old or Over—Sultan's Creed, 353694, J. H. Miller.

Champion Bull, Under Two Years—Sultan Serene, J. H. Miller.

Champion Cow, Two Years Old or Over—Lady Craven, 68618, J. H. Miller.

Champion Heifer, Under Two Years—Loch Dale Roanette, Leemon Stock Farm.

Grand Champion Bull, Any Age—Sultan's Creed, 353694, J. H. Miller.

Grand Champion Cow or Heifer, Any Age—Lady Craven, 68618, J. H. Miller.

Graded Herd—First, J. H. Miller.

Young Herd—First, J. H. Miller; second, Leemon Stock Farm; third, Achenbach Bros.

Calf Herd—First, J. H. Miller; second, Achenbach Bros.; third, Leemon Stock Farm; fourth, Leemon Stock Farm.

Get of Sire—First, J. H. Miller; second, Achenbach Bros.; third, Leemon Stock Farm; fourth, Achenbach Bros.; fifth, Leemon Stock Farm.

Produce of Cow—First, J. H. Miller; second, Achenbach Bros.; third, Achenbach Bros.; fourth, Achenbach Bros.; fifth, Leemon Stock Farm.

RED POLLED.

EXHIBITORS.

Haussler Bros., Holbrook, Nebraska; W. S. Hill, Alexandria, S. Dakota; J. W. Larrabee, Earlville, Illinois.

AWARDS.

JUDGE........................ANDREW BOSS, St. Paul, Minn.

Bull, Three Years or Over—First, Teddy's Best, 17603, Haussler, Bros.; second, Dandy, 13711, J. W. Larrabee; third, Rutland, 16053, W. S. Hill.

Bull, Two Years, Under Three—First, Jay Rose, 21041, J. W. Larrabee.

Bull, Senior Yearling—First Butler, 22595, W. S. Hill.

Bull, Junior Yearling—First, Teddy's Charmer, 23100, Haussler Bros.; second, Drexel, 23737, W. S. Hill; third, Teddy Roosevelt, 23571 Haussler Bros.

Bull, Senior Calf—First, Ivan, 23743, W. S. Hill; second, Teddy's Perfection, 24538, Haussler Bros.; third, Billy William, 24522, J. W. Larrabee; fourth, Teddy's Price, 24537, Haussler Bros.

Bull, Junior Calf—First, Gay Lad, 24540, Haussler Bros.; second, Reuben, W. S. Hill; third, Charmer 3d, 24541, Haussler Bros.; fourth, Pan Boy, 24526, J. W. Larrabee; fifth, David, 24524, J. W. Larrabee.

Cow, Three Years or Over—First, Nancy, 20169, W. S. Hill; second, Gazelle, 32011, Haussler Bros.; third, Apple Jelle, 30952, J. W. Larrabee; fourth, Susie 2d, 32967, J. W. Larrabee.

Heifer, Two Years, Under Three—First, Jennie, 32845, Haussler Bros.; second, Luna Lassie 18th, 34294, W. S. Hill; third, Minnie 35382, Haussler Bros.; fourth, Rose, 34496, J. W. Larrabee; fifth, Alma, 33993, J. W. Larrabee.

Heifer, Senior Yearling—First, Inis, 35557, Haussler Bros.; second, Red Rose, 35556, Haussler Bros.; third, Madelia, 34957, W. S. Hill; fourth, Virtue, 34950, W. S. Hill; fifth, Sweet Rose, 35531, J. W. Larrabee.

Heifer, Junior Yearling—First, Rochelle, 36335, W. S. Hill; second, Veda, 36333, W. S. Hill; third, Frolic, 36103, Haussler Bros; fourth, Rill, W. S. Hill; fifth, Surprise Lady, 36229, Haussler Bros.

Heifer, Senior Calf—First, Diantha, 36341, W. S. Hill; second, Chicago Girl, 37351, J. W. Larrabee; third, Orchid, 36344, W. S. Hill; fourth, Sarah, 36492, J. W. Larrabee.

Heifer, Junior Calf—First, Ruby Rose, W. S. Hill; second, Agness, 37353, J. W. Larrabee; third, Flora, 37357, J. W. Larrabee; fourth, Freda, W. S. Hill; fifth, Lady Crook, 37373, Haussler Bros.

Champion Bull Two Years or Over—Teddy's Best, 17603, Haussler Bros.

Champion Bull Under Two Years—Teddy's Charmer, 23100, Haussler Bros.

Champion Cow Two Years Old or Over—Nancy, 20169, W. S. Hill.

Champion Heifer Under Two Years Old—Rochelle, 36335, W. S. Hill.

Grand Champion Bull Any Age—Teddy's Best, 17603, Haussler Bros.

Grand Champion Cow or Heifer Any Age—Nancy, 20169, W. S. Hill.

Graded Herd—First, Haussler Bros.; second, W. S. Hill; third, J. W. Larrabee; fourth, J. W. Larrabee.

Young Herd—First, W. S. Hill; second, Haussler Bros.; third, W. S. Hill; fourth, J. W. Larrabee.

Calf Herd—First, W. S. Hill; second, J. W. Larrabee; third, W. S. Hill; fourth, Haussler Bros.; fifth, J. W. Larrabee.

Get of Sire—First, Haussler Bros.; second, W. S. Hill; third, W. S. Hill; fourth, J. W. Larrabee; fifth, Haussler Bros.

Produce of Cow—First, Haussler Bros.; second, J. W. Larrabee; third, Haussler Bros.; fourth, W. S. Hill; fifth, J. W. Larrabee.

HOLSTEINS.

EXHIBITORS.

Jno. A. Ballou, Janesville, Iowa; Geo. J. C. Copestake, Ames, Iowa; Dr. M. W. Downing & Bro., Waukesha, Wisconsin; M. R. Evans, Hinckley, Illinois; Wm. Galloway Farms, Waterloo, Iowa; Iowana Farms, Davenport, Iowa; C. A. Nelson, Waverly, Iowa; John Rensink, Boyden, Iowa.

AWARDS.

JUDGE......................W. J. GILLETT, Rosendale, Wis.

Bull Three Years or Over—First, Sir Jessie Fobes Piebe Burke, 41215, Geo. J. C. Copestake; second, Hengerveld King, 73744, C. A. Nelson; third, Ollie Johanna Sir Fayne, 59096, Iowana Farms; fourth, Sir Peterje Ormsby Mercedes 5th, 71081, Jno. Rensink.

Bull Two Years, Under Three—First, Oak DeKol Ollie Homestead, 85529, Iowana Farms; second, Brookvale Ormsby Wartena, 37118, Dr. M. W. Downing & Bro.; third, Beryl Wayne Madison Ann, 89281, Jno. A. Ballou; fourth, King Pontiac Mahomet, 86405, M. R. Evans.

Bull One Year, Under Two—First, Downing Pontiac Butter Man, 94805, Dr. M. W. Downing & Bros.; second, King Segis Pontiac Combination, 94710, Wm. Galloway.

Bull, Senior Calf—First, Iowana Houwtje Pontiac Count, 107805, Iowana Farms; second, Iowana Farms; third, Iowana Colantha Woodcrest Lad, 103436, Iowana Farms; fourth, Iowana Colantha Adirondac Lad, 103424, Iowana Farms; fifth, Sir Merthilde Kaan Spofford, M. R. Evans.

Bull, Junior Calf—First, Geo. J. Copestake; second, Sunnyside Segis Korndyke, Dr. M. W. Downing & Bro.; third, Walker Skylark of Cedarside, C. A. Nelson; fourth, Hengerveld Walker of Cedarside, C. A. Nelson; fifth, Elmwood Segis Korndyke 6th, Jno. Rensink.

Cow Four Years or Over—First, Chloe Artis Jewel of Cedarside, 120932, C. A. Nelson; second, Minnie Stienstra 2nd, 67708, Iowana Farms; third, Fay Jewell Beauty, 59866, Wm. Galloway Farms; fourth, Queen Gretgin Lutske, 139406, Iowana Farms; fifth, Piebe Beauty, 109114, Geo. J. C. Copestake.

Cow Three Years, Under Four—First, Colantha Johanna of Cedarside, 152087, C. A. Nelson; second, Star Watson Mooie 3rd, 144580, Iowana Farms; third, Jewel Abbekirk Gerben 3rd, 156624, C. A. Nelson; fourth, Piebe Colantha Ormsby, 143018, Geo. J. C. Copestake; fifth, Aggie Greenwood Pledge, 143835, M. R. Evans.

Heifer Two Years, Under Three—First, Fryslan Waldorf, 155158, Iowana Farms; second, Elizabeth Herbert Jewel, 159058, C. A. Nelson; third, Belle Bettina Skylark, 159059, C. A. Nelson; fourth, Johanna Fayal Pauline, 153768, Iowana Farms; fifth, Queen of Schillaard 2nd, 153902, Dr. M. W. Downing & Bro.

Heifer, Senior Yearling—First, Helen Taft of Cedarside, 187725, C. A. Nelson; second, Groveland Johanna Inka, 179549, C. A. Nelson; third, Iowana Colantha Veemay DeKol, 166776, Iowana Farms; fourth, Downing Pontiac Netherland Girl, 177789, Dr. M. W. Downing & Bro.; fifth, Groveland Albino Inka, 179546, Jno. A. Ballou.

Heifer, Junior Yearling—First, Iowana Colantha Larky, 192227, Iowana Farms; second, Piebe Fayne Concordia, 199962, Geo. J. C. Copestake; third, Downing Butter Queen, 178242, Dr. M. W. Downing & Bro.; fourth, Bessie Mutual DeKol Fobes, 179475, Iowana Farms; fifth, Iowana Colantha Lady, 192224, Iowana Farms.

Heifer, Senior Calf—First, Laurie Walker of Cedarside, C. A. Nelson; second, Elizabeth Walker, C. A. Nelson; third, Downing Pontiac Dairy Maid, 200962, Dr. M. W. Downing & Bro.; fourth, Iowana Jewell Lady Wayne, Iowana Farms; fifth, May Hengerveld 4th, 207512, Jno. A. Ballou.

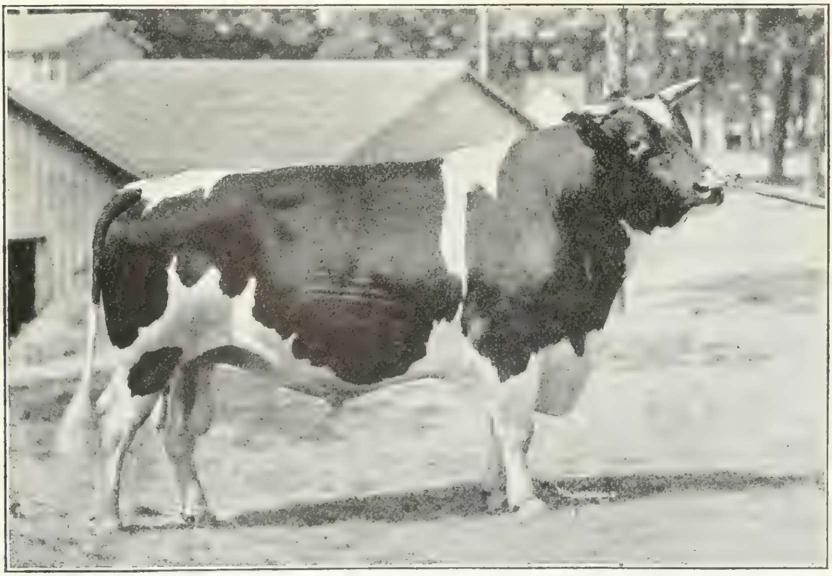
Heifer, Junior Calf—First, Iowana Farms; second, Iowana Countess Jessie, 201332, Iowana Farms; third, Geo. J. C. Copestake; fourth, Geo. J. C. Copestake; fifth, Lillian Walker Netherland, C. A. Nelson.

Champion Bull Two Years or Over—Sir Jessie Fobes Piebe Burke, Geo. J. C. Copestake.

Champion Bull Under Two Years—Iowana Houwtje Pontiac Count, 107805, Iowana Farms.

Champion Cow Two Years or Over—Chloe Artis Jewell of Cedarside, 120932, C. A. Nelson.

Champion Heifer Under Two Years—Iowana Farms.



Grand Champion Holstein Bull, Sir Jessie Forbes Piebe, Burke, 1913 Iowa State Fair and Exposition, owned by Geo. J. Copestake, Ames, Iowa.

Grand Champion Bull Any Age—Sir Jessie Fobes Piebe Burke, 41215, Geo. J. C. Copestake.

Grand Champion Cow or Heifer Any Age—Chloe Artis Jewell of Cedarside, 120932, C. A. Nelson.

Graded Herd—First, C. A. Nelson; second, Iowana Farms; third, Geo. J. C. Copestake; fourth, Dr. M. W. Downing & Bro.; fifth, M. R. Evans.

Young Herd—First, C. A. Nelson; second, Dr. M. W. Downing & Bro.; third, M. R. Evans.

Calf Herd—First, C. A. Nelson; second, C. A. Nelson; third, Geo. J. C. Copestake; fourth, Dr. M. W. Downing & Bro.; fifth, M. R. Evans.

Get of Sire—First, Iowana Farms; second, C. A. Nelson; third, Geo. J. C. Copestake; fourth, C. A. Nelson; fifth, Geo. J. C. Copestake.

Produce of Cow—First, Iowana Farms; second, C. A. Nelson; third, Dr. M. W. Downing & Bro.; fourth, C. A. Nelson; fifth, M. R. Evans.

Premier Exhibitor—C. A. Nelson.

Premier Breeder—C. A. Nelson.

JERSEY.

EXHIBITORS.

G. A. Chaffee, Minneapolis, Minnesota; J. K. Dering, Lake Villa, Illinois; Nelle Fabyan, Geneva, Illinois; J. B. Smith, Platte City, Missouri; G. R. Williams, Magnolia, Illinois.

AWARDS.

JUDGE..................HUGH G. VAN PELT, Waterloo, Iowa.

Bull Three Years or Over—First, Ocean Blue, 99477, Nelle Fabyan; second, Combination Golden Prince, G. A. Chaffee; third, Eagle's Chief, 103566, J. K. Dering.

Bull Two Years, Under Three—First, Combination Golden Champion, 98877, G. A. Chaffee; second, Majesty's Golden Son, 106253, J. K. Dering; third, Fairy Grit, 106251, J. K. Dering.

Bull One Year, Under Two—First, Leda's Champion Lad, 106268, G. A. Chaffee; second, Cowslip's Columbine, 104686, G. A. Chaffee; third, Cedar Crest Lad, 106511, J. K. Dering; fourth, Lucy's Map, 114739, J. K. Dering.

Bull, Senior Calf—First, Dairymaid's Combination, G. A. Chaffee; second, Light Blue of Riverbank, Nelle Fabyan; third, Plush's Oxford You'll Do, G. A. Chaffee.

Bull, Junior Calf—First, Rose's Fairy Boy, 114624, J. K. Dering; second, Viola's Elmhurst Jolly 2nd, G. A. Chaffee; third, Elmhurst Jolly Pierrette, G. A. Chaffee.

Cow Four Years or Over—First, Eulinda's Venner, 256021, J. K. Dering; second, Sweet Myrtle, 257182, G. A. Chaffee; third, Swift's Persian Rose, 233607, Nelle Fabyan; fourth, Tucker Sophie, 211286, G. A. Chaffee; fifth, Noble's Brown Maid, 235189, J. K. Dering.

Cow Three Years, Under Four—First, Pansy's Emigrant Maid, 270608, G. A. Chaffee; second, Lythia's Lady Fern, 289431, G. A. Chaffee.

Heifer Two Years, Under Three—First, Violette's Rosie, 260389, J. K. Dering; second, Eminent's Cassie Daisy, 275460, G. A. Chaffee; third, Bonnie Pearly, 271654, G. A. Chaffee.

Heifer, Senior Yearling—First, Rossmore Lady, 275998, J. K. Dering; second, Jolly's Lassie, 275999, J. K. Dering; third, Combination's Prince's Lady, 275461, G. A. Chaffee.

Heifer, Junior Yearling—First, Nelle of Riverbank, Nell Fabyan; second, Lady Nelle of Riverbank, Nell Fabyan; third, Fairy Boy's Miss Farn, 277988, J. K. Dering; fourth, Fairy Boy's Camille, 277989, J. K. Dering; fifth, Elsie's Princess, 271219, G. A. Chaffee.

Heifer, Senior Calf—First, Fairy Boy's Belle, 293385, J. K. Dering; second, Fairy Boy's Eulinda, 293384, J. K. Dering; third, Miss Hauteville, 293384, J. K. Dering; fourth, Elmhurst Jacobi Irene, G. A. Chaffee; fifth, Combination Countess Maid, G. A. Chaffee.

Heifer, Junior Calf—First, Rose of Riverbank, Nelle Fabyan; second, Noble's Golden Lucie, 289439, G. A. Chaffee; third, Fairy Boy's Alma, 293386, J. K. Dering; fourth, Lily of Elmhurst, G. A. Chaffee.

Champion Bull Two Years or Over—Ocean Blue, 99477, Nelle Fabyan.

Champion Bull Under Two Years—Rose's Fairy Boy, 114624, J. K. Dering.

Champion Cow Two Years or Over—Eulinda's Venner, 256021, J. K. Dering.

Champion Heifer Under Two Years—Fairy Boy's Belle, 293385, J. K. Dering.

Grand Champion Bull Any Age—Ocean Blue, 99477, Nelle Fabyan.

Grand Champion Cow or Heifer Any Age—Eulinda's Venner, 256021, J. K. Dering.

Graded Herd—First, J. K. Dering; second, G. A. Chaffee.

Young Herd—First, J. K. Dering; second, G. A. Chaffee.

Calf Herd—First, J. K. Dering; second, G. A. Chaffee.

Get of Sire—First, Nelle Fabyan; second, J. K. Dering; third, J. K. Dering; fourth, G. A. Chaffee.

Produce of Cow—First, J. K. Dering; second, Nelle Fabyan; third, J. K. Dering; fourth, G. A. Chaffee.

Premier Exhibitor—J. K. Dering.

Premier Breeder—J. K. Dering.

GUERNSEYS.

EXHIBITORS.

Nelle Fabyan, Geneva, Illinois; A. W. & F. E. Fox, Waukesha, Wisconsin; W. W. Marsh, Waterloo, Iowa; Wilcox & Stubbs, Des Moines, Iowa; John H. Williams, Waukesha, Wisconsin.

AWARDS.

JUDGE.....................CHARLES L. HILL, Rosendale, Wis.

Bull Three Years or Over—First, Imp. Hayes Cherub 2nd, 25147, W. W. Marsh; second, Rex Mar, 19668, W. W. Marsh; third, Topsy's County Yeksa, 11759, A. W. & F. E. Fox; fourth, Imp. Holden IV, 12179, Wilcox & Stubbs; fifth, King Talladeen of Chestnut Hill, 13460, A. W. & F. E. Fox.

Bull Two Years, Under Three—First, Gay's May King, 19731, Wilcox & Stubbs; second, Tricksey's George of Sunny Side, 18355, A. W. & F. E. Fox; third, Trislette's King of the May, 19613, Jno. H. Williams.

Bull One Year, Under Two—First, Bopeep's Mar of Iowa, 22134, W. W. Marsh; second, Raymond's Billy of the Hague, 21852, A. W. & F. E. Fox; third, King Bell II, 22277, Wilcox & Stubbs; fourth, Park's Flossie's King, 18122, Jno. H. Williams; fifth, Billy France of the West, 19769, A. W. & F. E. Fox.

Bull, Senior Calf—First, Dairy Maid's Rouge of Iowa, 24845, W. W. Marsh; second, Zuda's Sequel, 24350, A. W. & F. E. Fox; third, Glenwood's Volunteer, 24228, A. W. & F. E. Fox; fourth, Victor Van of Maple's Farm, 24117, W. W. Marsh; fifth, Dafney's Masher, Wilcox & Stubbs.

Bull, Junior Calf—First, Jno. H. Williams; second, Jno. H. Williams; third, Gratify's Standard, 25521, A. W. & F. E. Fox; fourth, Holden's Monogram, Wilcox & Stubbs.

Cow Four Years or Over—First, Glenwood's Hazel, 28612, W. W. Marsh; second, Essie Jeweller, 14265, A. W. & F. E. Fox; third, Fernleaf of the Glen, 21661, W. W. Marsh; fourth, Buenna B., 20304, Park's Golden Spot, 26810, Jno. H. Williams.

Cow Three Years, Under Four—First, Frances Rose of Fairview, 30950, Wilcox & Stubbs; second, Pleasure of Waukesha, 28315, A. W. & F. E. Fox.

Heifer Two Years, Under Three—First, School Girl of Waukesha, 35369, A. W. & F. E. Fox; second, Park's Princess Rhea, 34930, Jno. H. Williams; third, Imp. Hays Snowdrop 4th, 44967, W. W. Marsh; fourth, Imp. Butter Queen des Reutts, W. W. Marsh; fifth, Rhea's Park Dawn, 34761, Jno. H. Williams.

Heifer, Senior Yearling—First, Imp. Moreland Aquamarine, 44974, W. W. Marsh; second, Francis Rilma of Iowa, 40782, Wilcox & Stubbs; third, Park's Isabella 2nd, 38814, Jno. H. Williams; fourth, Imp. Flora of the Briquet, W. W. Marsh; fifth, Dairy Maid of Waukesha, 38053, A. W. & F. E. Fox.

Heifer, Junior Yearling—First, Lilly La Rive, 43842, W. W. Marsh; second, Village Lassie 2nd, 41205, Wilcox & Stubbs; third, Budding Blossom, 41203, Wilcox & Stubbs; fourth, Polly of Riverbank, Nelle Fabyan; fifth, Imp. Rose des Howards 59th, 44975, W. W. Marsh.

Heifer, Senior Calf—First, Imp. Hayes Citron 3rd, 44981, W. W. Marsh; second, Lady Elizabeth of Maple Farms, 43372, W. W. Marsh; third, Plato's Snowstorm, 43363, W. W. Marsh; fourth, Pleasure Promise, 43528, A. W. & F. E. Fox; fifth, Glencoe's Bopeep 2nd, 43160, W. W. Marsh.

Heifer, Junior Calf—First, Village Lassie 3rd, Wilcox & Stubbs; second, Sundari's Dairy Maid, 45635, A. W. & F. E. Fox; third, Sans Souci of Iowa, W. W. Marsh; fourth, Selma's Dairy Girl, 45469, A. W. & F. E. Fox; fifth, Jedelta 2nd of Iowa, W. W. Marsh.

Champion Bull Two Years or Over—Imp. Hayes Cherub 2nd, 25147, W. W. Marsh.

Champion Bull Under Two Years—Bopeep's Mar of Iowa, 22134, W. W. Marsh.

Champion Cow Two Years or Over—Glenwood's Hazel, 28612, W. W. Marsh.

Champion Heifer Under Two Years—Imp. Moreland Aquamarine, 44974, W. W. Marsh.

Grand Champion Guernsey Cow, Glenwood's Hazel, W. W. Marsh, Waterloo, Iowa.

Grand Champion Bull, Any Age—Imp. Hayes Cherub 2nd, 25147, W. W. Marsh.

Grand Champion Cow or Heifer, Any Age—Glenwood's Hazel, 28612, W. W. Marsh.

Graded Herd—First, W. W. Marsh; second, A. W. & F. E. Fox; third, W. W. Marsh; fourth, Wilcox & Stubbs; fifth, Jno. H. Williams.

Young Herd—First, W. W. Marsh; second, Jno. H. Williams; third, A. W. & F. E. Fox; fourth, Wilcox & Stubbs; fifth, A. W. & F. E. Fox.

Calf Herd—First, W. W. Marsh; second, A. W. & F. E. Fox; third, Jno. H. Williams; fourth, W. W. Marsh; fifth, Wilcox & Stubbs.

Get of Sire—First, W. W. Marsh; second, Jno. H. Williams; third, Wilcox & Stubbs; fourth, W. W. Marsh; fifth, W. W. Marsh.

Produce of Cow—First, Jno. H. Williams; second, Wilcox & Stubbs; third, W. W. Marsh; fourth, A. W. & F. E. Fox; fifth, Jno. H. Williams.

Premier Exhibitor—W. W. Marsh.

Premier Breeder—W. W. Marsh.

SPECIAL PRIZE OFFERED BY THE AMERICAN GUERNSEY CATTLE CLUB.

Premier Breeder—W. W. Marsh.

AYRSHIRE.

EXHIBITORS.

Adam Seitz, Waukesha, Wisconsin; Wm. Galloway Farms, Waterloo, Iowa.

AWARDS.

JUDGE........................W. J. KENNEDY, Ames, Iowa.

Bull Three Years or Over—First, Imp. Bargenoch Gay Cavalier, 11981, Adam Seitz; second, Auchenbrain Good Gift, 15487, Wm. Galloway Farms.

Bull One Year, Under Two—First, Bargenoch Rising Star, 14843, Adam Seitz; second, Edgewood Spencer, 15489, Wm. Galloway Farms; third, Wm. Galloway Farms.

Bull Calf Under One Year—First, Cavalier's Fond Memory, Adam Seitz; second, Cavalier's Leader of Fashion, Adam Seitz; third, Snowdrop's Free Trader, 15615, Wm. Galloway Farms; fourth, Cavalier's Fashion Plate, Adam Seitz.

Cow Four Years or Over—First, Imp. Barboigh Maggie 10th, (23779), Adam Seitz; second, Imp. Howie's Ladylike, 21432, Wm. Galloway Farms; third, Adam Seitz; fourth, Nona II of Avon, 23090, Wm. Galloway Farms.

Cow Three Years, Under Four—First, Imp. Tower Tulip (32152), Adam Seitz; second, Imp. Barleith Lily White, (33631), Adam Seitz; third, Lady Hopeful's Pride, 34428, Wm. Galloway Farms; fourth, Imp. Dalpeddor Lady Taylor, 30666, Wm. Galloway Farms.

Heifer Two Years, Under Three—First, Imp. Tower Moss Rose (32140), Adam Seitz; second, Imp. Harperland Pansey, (34566), Adam Seitz; third, Cherry Bank Sylvia, 34228, Wm. Galloway; fourth, Financier Violet, 31879, Wm. Galloway.

Heifer, Senior Yearling—First, Bargenoch Queen, 32945, Adam Seitz; second, Bargenoch Silver Pet, 32946, Adam Seitz; third, Buntie of Willow Farm, 34435, Wm. Galloway Farms.

Heifer, Junior Yearling—First, Bargenoch Linnie Lindsay, 32947, Adam Seitz; second, Wm. Galloway Farms.

Heifer, Senior Calf—First, Cavalier's Violet, Adam Seitz; second, Cavalier's Bluebell, Adam Seitz; third, Rose Free Trader, 34909, Wm. Galloway.

Heifer, Junior Calf—First, Carson Miss Maud, Adam Seitz; second, Daisy, Adam Seitz.

Champion Bull Two Years or Over—Imp. Bargenoch Gay Cavalier, Adam Seitz.

Champion Bull Under Two Years—Bargenoch Rising Star, 14843, Adam Seitz.

Champion Cow Two Years or Over—Imp. Barboigh Maggie 10th, (23779), Adam Seitz.

Champion Heifer Under Two Years Old—Bargenoch Queen, 32945, Adam Seitz.

Grand Champion Bull, Any Age—Imp. Bargenoch Gay Cavalier, 11981, Adam Seitz.

Grand Champion Cow or Heifer, Any Age—Imp. Barboigh Maggie 10th, (23779), Adam Seitz.

Graded Herd—First, Adam Seitz; second, Wm. Galloway Farms.

Young Herd—First, Adam Seitz.

Calf Herd—First, Adam Seitz; second, Adam Seitz.

Get of Sire—First, Adam Seitz; second, Adam Seitz.

Produce of Cow—First, second and third, Adam Seitz.

Premier Exhibitor—Adam Seitz.

Premier Breeder—Adam Seitz.

BROWN SWISS.

EXHIBITORS.

Allynhurst Farms, Delavan, Wisconsin; H. W. Ayers, Honey Creek, Wisconsin.

AWARDS.

JUDGE..................HUGH G. VAN PELT, Waterloo, Iowa.

Bull Three Years or Over—First, My-One Boy, 3120, Allynhurst Farms; second, College Master, 2986, H. W. Ayers.

Bull Two Years, Under Three—First, Zell A., 3508, H. W. Ayers.

Bull One Year, Under Two—First, Iown Laddie, 3628, Allynhurst Farms; second, Allynhurst Farms; third, Colonel Walker, 3666, H. W. Ayers.

Bull Calf Under One Year—First, Casper Brown of Allynhurst, 4077, Allynhurst Farms; second, Showboy of Allynhurst, 4075, Allynhurst Farms; third, Zell G., H. W. Ayers; fourth, Zell H., H. W. Ayers.

Cow Four Years or Over—First, Arlene, 2769, Allynhurst Farms; second, Iown of Allynhurst, 3959, Allynhurst Farms; third, Cuma, 2198, H. W. Ayers; fourth, Myone Baby, 3378, Allynhurst Farms.

Cow Three Years, Under Four—First, Belle of Grattan, 5144, Allynhurst Farms; second, Peach, 4772, H. W. Ayers; third, Myone of Allynhurst, 4546, Allynhurst Farms.

Heifer Two Years, Under Three—First, Zelma H., 5118, H. W. Ayers; second, Gwennilla of Allynhurst, 4998, Allynhurst Farms; third, Upland Beauty, 5133, H. W. Ayers.

Heifer, Senior Yearling—First, Showgirl of Allynhurst, 5545, Allynhurst Farms; second, Zell's Crocus, 5504, H. W. Ayers; third, Coquette of Allynhurst, 5546, Allynhurst Farms.

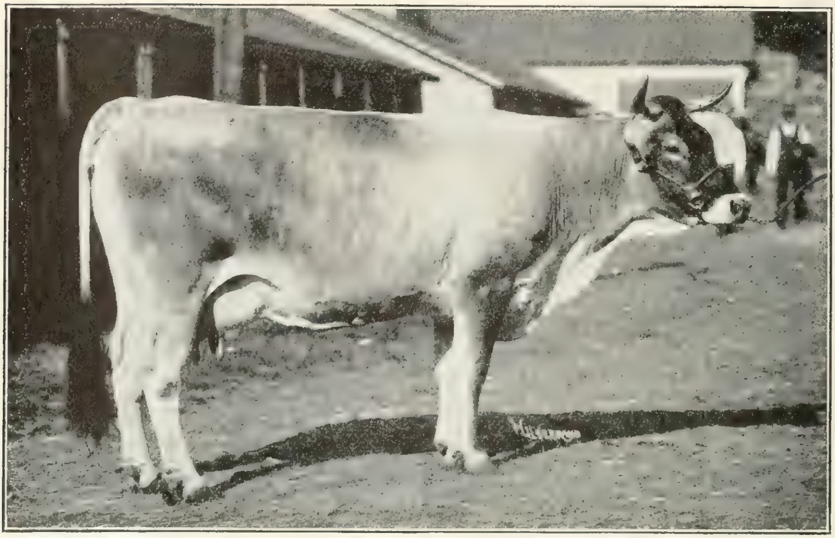
Heifer, Junior Yearling—First, Miss Colier, 5506, H. W. Ayers; second, Allynhurst Farms.

Heifer, Senior Calf—First, Iown 4th of Allynhurst, 5895, Allynhurst Farms; second, Zelia, H. W. Ayers; third, Merry Maid of Allynhurst, 5897, Allynhurst Farms.

Heifer, Junior Calf—First, Ernetta G., H. W. Ayers.

Champion Bull Two Years or Over—My-One Boy, 3120, Allynhurst Farms.

Champion Bull Under Two Years—Casper Brown of Allynhurst, 4075, Allynhurst Farms.



Champion Brown Swiss Cow, Belle of Gratten, 1913, owned by J. P. Allyn, Delaven, Wis.

Champion Cow Two Years or Over—Belle of Grattan, 5144, Allynhurst Farms.

Champion Heifer Under Two Years—Ernetta G., H. W. Ayers.

Grand Champion Bull, Any Age—My-One Boy, 3120, Allynhurst Farms.

Grand Champion Cow or Heifer, Any Age—Belle of Grattan, 5144, Allynhurst Farms.

Graded Herd—First, Allynhurst Farms; second, H. W. Ayers.

Young Herd—First, Allynhurst Farms; second, H. W. Ayers.

Calf Herd—First, H. W. Ayers; second, Allynhurst Farms.

Get of Sire—First, Allynhurst Farms; second, H. W. Ayers; third, Allynhurst Farms.

Produce of Cow—First, Allynhurst Farms; second, H. W. Ayers; third, Allynhurst Farms.

Premier Exhibitor—Allynhurst Farms.

SPECIAL PRIZE OFFERED BY THE BROWN SWISS CATTLE BREEDERS' ASSOCIATION.

Get of Sire—First, Allynhurst Farms; second, H. W. Ayers.

DUTCH BELTED.

EXHIBITOR.

Frank Reed Sanders, Mesa, Arizona.

AWARDS.

JUDGE........................AXEL HANSEN, Ames, Iowa.

Bull Three Years or Over—First, Chief Coboway, 998.
Bull Two Years, Under Three—First, Columbia King, 1015.
Bull One Year, Under Two—First, Caruso of Rancho, 943.
Bull, Senior Calf—First, Sutton Girl's Prince, 1012.
Bull, Junior Calf—First, Paloma Lad, Vol. II.
Cow Four Years or Over—First, Sutton Girl, 1367.
Cow Three Years, Under Four—First, Filma's Columbia, 2034.
Heifer Two Years, Under Three—First, Chiquita, 1926.
Heifer, Senior Yearling—First, Rose of Columbia, 2036.
Heifer, Junior Yearling—First, Melba of the Rancho, 1928.
Heifer, Senior Calf—First, Gem of Columbia, 2038.
Heifer, Junior Calf—First, Thelma's Mermaid, 2039.
Champion Bull Two Years or Over—Columbia King, 1015.
Champion Bull Under Two Years—Sutton Girl's Prince, 1012.
Champion Cow Two Years or Over—Sutton Girl, 1367.
Champion Heifer Under Two Years—Gem of Columbia, 2038.
Grand Champion Bull, Any Age—Columbia King, 1015.
Grand Champion Cow or Heifer, Any Age—Sutton Girl, 1367.
Graded Herd—First,
Young Herd—First,
Get of Sire—First and second,
Produce of Cow—First and second,
Premier Exhibitor—First.
Premier Breeder—First,

FAT SHORT HORNS.

(PURE BREDS).

EXHIBITORS.

Wm. Herkelmann, Elwood, Iowa; L. C. Oloff, Ireton, Iowa; C. A. Saunders, Manilla, Iowa; W. W. Vaughn, Marion, Iowa; W. A. Wickersham, Melbourne, Iowa.

AWARDS.

JUDGE................T. E. ROBSON, London, Ont., Canada.

Steer, Spayed or Martin Heifer Two Years, Under Three—First, Ohio King, C. A. Saunders; second, Luck Bill, Wm. Herkelmann.

Steer, Spayed or Martin Heifer One Year, Under Two—First, Rome Bomff, L. C. Oloff; second, Dutch Joe, C. A. Saunders; third, Royal C., C. A. Saunders; fourth, Cumberland, C. A. Saunders.

Steer, Spayed or Martin Heifer Under One Year—First, C. A. Saunders; second, Harold, L. C. Oloff; third, Sassy Boy, Wm. Herkelmann.

Champion Steer, Spayed or Martin Heifer—Rome Bomff, L. C. Oloff.

Group of Three, Owned by Exhibitor—First, C. A. Saunders; second, Wm. Herkelmann.

GRADE OR CROSS BRED.

Steer, Spayed or Martin Heifer Two Years, Under Three—First, Charley, C. A. Saunders; second, Joe, C. A. Saunders; third, Sunny Jim, Wm. Herkelmann.

Steer, Spayed or Martin Heifer One Year, Under Two—First, Snow Ball, L. C. Oloff; second, Spot, C. A. Saunders; third, Cumberland's Model, C. A. Saunders; fourth, George, C. A. Saunders.

Steer, Spayed or Martin Heifer, Under One Year—First, Roan Baby, W. A. Wickersham; second, Billy, C. A. Saunders; third, Jack, W. W. Vaughn; fourth, John, C. A. Saunders.

Champion Steer, Spayed or Martin Heifer—Roan Baby, W. A. Wickersham.

Group of Three, Owned by Exhibitor—First and second, C. A. Saunders.

FAT HEREFORD.

(PURE BRED).

EXHIBITORS.

E. M. Cassady, Whiting, Iowa; O. S. Gibbons and Son, Atlantic, Iowa; O. Harris, Harris, Missouri; Robt. H. Hazlett, Eldorado, Kansas; Cyrus A. Tow, Norway, Iowa.

AWARDS.

JUDGE........................CHAS. ESCHER, JR., Botna, Iowa.

Steer, Spayed or Martin Heifer Two Years, Under Three—First, Cyrus A. Tow; second, E. M. Cassady.

Steer, Spayed or Martin Heifer One Year, Under Two—First, Cyrus A. Tow; second, O. Harris; third, E. M. Cassady; fourth, E. M. Cassady.

Steer, Spayed or Martin Heifer Under One Year—First, E. M. Cassady; second, Cyrus A. Tow.

Champion Steer, Spayed or Martin Heifer—Cyrus A. Tow.

Group of Three Owned by Exhibitor—First, Cyrus A. Tow.

(GRADE OR CROSS BRED).

Steer, Spayed or Martin Heifer Two Years, Under Three—First, Cyrus A. Tow.

Steer, Spayed or Martin Heifer One Year, Under Two—First, Cyrus A. Tow; second, O. S. Gibbons and Son; third, E. M. Cassady.

Steer, Spayed or Martin Heifer Under One Year—First, O. S. Gibbons and Son; second, Cyrus A. Tow.

Champion Steer, Spayed or Martin Heifer—Cyrus A. Tow.

Group of Three Owned by Exhibitor—First, Cyrus A. Tow.

FAT ABERDEEN ANGUS.

(PURE BRED).

EXHIBITORS.

R. M. Anderson & Sons, Newell, Iowa; W. F. Desenberg, Norwalk, Iowa; Jno. Krambeck, Marne, Iowa; E. G. Miller, Melbourne, Iowa; W. J. Miller, Newton, Iowa; Carl A. Rosenfeld, Kelley, Iowa.

AWARDS.

JUDGE..............................E. T. DAVIS, Iowa City, Ia.

Steer, Spayed or Martin Heifer Two Years, Under Three—First, Blackward's Knight 3rd, 1817, W. J. Miller.

Steer, Spayed or Martin Heifer One Year, Under Two—First, Riverdale Perfection, R. M. Anderson & Sons; second, Black Bloom 2nd, 1816, W. J. Miller.

Champion Steer, Spayed or Martin Heifer—Blackward's Knight 3rd, 1817, W. J. Miller.

(GRADE OR CROSS BRED).

Steer, Spayed or Martin Heifer Two Years, Under Three—First, Black Mist, Carl A. Rosenfeld; second, Wild Tom, W. J. Miller.

Steer, Spayed or Martin Heifer One Year, Under Two—First, Rollicker, Carl A. Rosenfeld; second, Prize, Jno. Krambeck; third, Cherry Bill, W. J. Miller.

Steer, Spayed or Martin Heifer Under One Year—First, Gay Prince, W. J. Miller.

Champion Steer, Spayed or Martin Heifer—Black Mist, Carl A. Rosenfeld.

Group of Three Owned by Exhibitor—First, Carl A. Rosenfeld.

(PURE BREDS, GRADES AND CROSS BREDS).

Grand Champion—Black Mist, Carl A. Rosenfeld.

Grand Champion Group—Carl A. Rosenfeld.

SWINE DEPARTMENT.

SUPERINTENDENT......R. S. JOHNSTON, Columbus, Junction, Ia.

POLAND CHINAS.

EXHIBITORS.

F. W. Akers, Laurel, Iowa; A. J. Banks, Montour, Iowa; E. S. Barker, Doon, Iowa; R. R. Blake, Waukee, Iowa; L. C. Burford & Sons, Monticello, Iowa; H. H. Diers, St. Olaf, Iowa; M. A. Dowling & Son, Reasnor, Iowa; J. S. Fawcett & Son, Springdale, Iowa; S. Fleming, Stuart, Iowa; Fred C. Hassler, Manning, Iowa; Henry Bros. Co., Sheldon, Iowa; Mrs. Ermile Hunt, Carlisle, Iowa; A. Kool, Cordova, Iowa; Joe Kramer, Elkader, Iowa; P. B. Lake, Moscow, Iowa; Wm. Lentz, Ankeny, Iowa; G. F. Marshall & Son, Monroe, Iowa; J. A. Mason, Carlisle, Iowa; J. E. Meharry, Tolono, Illinois; C. W. Overton, Knoxville, Iowa; D. H. Paul, Laurel, Iowa; F. G. Paul, Marshalltown, Iowa; J. L. Risley, Ames, Iowa; F. J. Sexsmith, Orient, Iowa; Mark I. Shaw, Monroe, Iowa; M. Shivers, Knoxville, Iowa; J. M. Stewart, Ainsworth, Iowa; W. Z. Swallow, Waukee, Iowa; Whiting Farm, Whiting, Iowa; E. C. Wilson, West Liberty, Iowa; W. L. Wiley, Menlo, Iowa; P. W. Young, Proper, Minnesota.

AWARDS.

JUDGE........................LLOYD MUGG, Kokomo, Ind.

Boar Two Years or Over—First, Sultan, 19659, J. E. Meharry; second, Chief Price I Am, 202471, M. Shivers; third, L's Big Bone, 196615, R. R. Blake; fourth, Big Bone's Wonder, 181753, F. G. Paul; fifth, Woodrow Wilson, A. J. Banks; sixth, Big Orient, 188745, F. J. Sexsmith.

Boar Eighteen Months Under Two Years—First, Imperator, 205205, J. E. Meharry; second, Win On, 191519, Joe Kramer; third, Dorr's King, 204769, J. L. Risley.

Boar One Year Under Eighteen Months—First, Black Big Knox, 203355, Isaac Overton; second, Master's Giant, 190781, R. W. Young; third, Mabel's Giant, 190779, Whiting Farm; fourth, Miss T. R.'s A. Wonder, 198989, W. Z. Swallow; fifth, F. G. Paul; sixth, Darkness Model, 198211, J. E. Meharry.

Boar Six Months, Under One Year—First, Banker Perfection, 203937, J. E. Meharry; second, Expansion King, 197351, E. S. Barker; third, Columbia A. Wonder 8th, 203473, W. Z. Swallow; fourth, M. S. Chief Price 2nd, M. Shivers; fifth, Columbia Price, M. Shivers; sixth, D. H. Paul; seventh, Big Dude, F. G. Paul.

Boar Under Six Months—First, E. C. Wilson; second, E. C. Wilson; third, J. E. Meharry; fourth, J. A. Mason; fifth, C. N. Overton; sixth, Isaac Overton; seventh, J. M. Stewart.

Sow Two Years or Over—First, Louise Model 2nd, 454494, J. E. Meharry; second, Pansy 2nd, 452022, J. M. Stewart; third, Whiting Farm Lady 1st, 454290, Whiting Farm; fourth, Vala Spellbinder 7th, 453980, Joe Kramer; fifth, Long Belle, 482418, D. H. Paul; sixth, Esher's Standard, 137418, Fred C. Hassler.

Sow Eighteen Months, Under Two Years—First, Rose 2nd, J. E. Meharry; second, Darkness Royal 2nd, J. E. Meharry; third, D. H. Paul; fourth, Mastodon's Modesty, 453710, F. G. Paul; fifth, New Lady Perfection, Joe Kramer; sixth, Mastoden May, 482666, F. G. Paul; seventh, Orphan Maid 1st, 160623, Fred C. Hassler.

Sow One Year, Under Eighteen Months—First, Princess Model, 474384, J. E. Meharry; second, Bashful Model 2nd, 458666, J. E. Meharry; third, Jessie Expansion, 452740, E. S. Barker; fourth, Jessie's Pet, 452716, E. S. Barker; fifth, Iowa Queen, 482662, F. G. Paul; sixth, Futurity Belle, 453982, Joe Kramer; seventh, Modesty's Lady 1st, 453716, F. G. Paul.

Sow Six Months, Under One Year—First, Florence, 480734, J. E. Meharry; second, Queen Hi, 481776, E. S. Barker; third, Harriett, 480736, J.

E. Meharry; fourth, Miss Keepsake 1st, 482428, D. H. Paul; fifth, Jessie's Pride, 481794, E. S. Barker; sixth, D. H. Paul; seventh, Long Giantess, F. W. Akers.

Sow Under Six Months—First, J. M. Stewart; second, E. S. Barker; third, Mrs. Ermile Hunt; fourth, J. A. Mason; fifth, E. C. Wilson; sixth, E. S. Barker; seventh, K. Perfection Lady, Joe Kramer.

Senior Champion Boar One Year or Over—Sultan, 19659, J. E. Meharry.

Junior Champion Boar Under One Year—Banker Perfection, 203937, J. E. Meharry.

Senior Champion Sow One Year or Over—Louise Model 2nd, 454494, J. E. Meharry.

Junior Champion Sow Under One Year—Florence, 480734, J. E. Meharry.

Grand Champion Poland China Boar, 1913 Iowa State Fair and Exposition, owned by J. E. Meharry, Tolono, Ill.

Grand Champion Boar, Any Age—Sultan, 19659, J. E. Meharry.

Grand Champion Sow, Any Age—Louise Model 2nd, 454494, J. E. Meharry.

Boar and Three Sows Over One Year—First, J. E. Meharry; second, J. E. Meharry; third, F. G. Paul; fourth, D. H. Paul; fifth, Joe Kramer; sixth, J. L. Risley.

Boar and Three Sows Over One Year, Bred by Exhibitor—First, J. E. Meharry; second, J. E. Meharry; third, F. G. Paul; fourth, D. H. Paul; fifth, Joe Kramer; sixth, J. L. Risley.

Boar and Three Sows Under One Year—First, J. E. Meharry; second, E. S. Barker; third, D. H. Paul; fourth, J. A. Mason; fifth, M. Shivers; sixth, M. Shivers; seventh, R. R. Blake.

Boar and Three Sows Under One Year—First, J. E. Meharry; second, E. S. Barker; third, D. H. Paul; fourth, J. A. Mason; fifth, M. Shivers; sixth, M. Shivers; seventh, R. R. Blake.

Get of Sire—First, J. E. Meharry; second, J. E. Meharry; third, F. G. Paul; fourth, J. A. Mason; fifth, E. S. Barker; sixth, D. H. Paul, seventh, M. Shivers.

Produce of Sow—First, J. E. Meharry; second, J. E. Meharry; third, E. C. Wilson; fourth, F. G. Paul; fifth, E. S. Barker; sixth, J. A. Mason; seventh, M. Shivers.

POLAND CHINA FUTURITIES.

(SPRING PIGS).

Boar Pigs—First, E. C. Wilson; second, E. C. Wilson; third, J. A. Mason; fourth, D. H. Paul; fifth, Isaac Overton; sixth, C. W. Overton; seventh, E. S. Barker; eighth, J. S. Fawcett & Son.

Sow Pigs—First, J. M. Stuart; second, E. S. Barker; third, J. A. Mason; fourth, J. A. Mason; fifth, E. C. Wilson; sixth, E. S. Barker; seventh, Whiting Farm; eighth, J. M. Stewart.

Litters—First, E. C. Wilson; second, J: A. Mason; third, E. S. Barker; fourth, J. M. Stewart; fifth, R. R. Blake; sixth, D. H. Paul; seventh, J. S. Fawcett & Sons; eighth, E. S. Barker.

YEARLINGS.

Boars—First, R. W. Young; second, Whiting Farm; third, W. Z. Swallow; fourth, F. G. Paul; fifth, D. H. Paul; sixth, R. R. Blake.

Sows—First, E. S. Barker; second, E. S. Barker; third, F. G. Paul; fourth, F. G. Paul; fifth, D. H. Paul; sixth, F. W. Akers.

FALL PIGS.

Boars—First, E. S. Barker; second, W. Z. Swallow; third, D. H. Paul; fourth, J. A. Mason; fifth, F. G. Paul.

Sows—First, D. H. Paul; second, E. S. Barker; third, D. H. Paul; fourth, E. S. Barker; fifth, F. W. Akers.

DUROC JERSEY.

EXHIBITORS.

A. P. Alsin, Boone, Iowa; Ashby, Hockett & Gardner, Audubon, Iowa; Lester Barton, Blair, Nebraska; E. A. Bonham, Mackburg, Iowa; R. W. Brearley, Lake City, Iowa; H. I. Branson, West Branch, Iowa; H. E. Browning, Hersman, Illinois; F. B. Butterfield, Ankeny, Iowa; M. C. Cramer, Monroe, Iowa; Arthur Dearinger, Reasnor, Iowa; H. H. Diers, St. Olaf, Iowa; Economy Stock Farm, Shenandoah, Iowa; J. S. Fawcett & Son, Springdale, Iowa; Geo. Gawley, Irwin, Iowa; S. P. Freed, Ames, Iowa; J. W. Grinstead, Mitchellville, Iowa; J. E. Hammer, Paton, Iowa; Hanks & Bishop, New London, Iowa; R. J. Harding, Macedonia, Iowa; P. B. Lake, Moscow, Iowa; A. E. Long, Mt. Pleasant, Iowa; Grant Lynn, Spirit Lake, Iowa; R. G. McDuff, Monroe, Iowa; B. C. Marts, Hampton, Iowa; Howard R. Moore, Dexter, Iowa; D. Nauman, West Liberty, Iowa; H. C. Nichols, West Liberty, Iowa; O. E. Osborn, Weston, Iowa; W. B. Shaw, Monroe, Iowa; Chas. J. Shepard, Muscatine, Iowa; H. B. Staples, Lake City, Iowa; S. W. Stewart & Sons, Kennard, Nebraska; John Thompson, Lake City, Iowa; C. O. Thornburg, Pleasantville, Iowa; Waltemeyer Bros., Melbourne, Iowa; C. A. Warrick, Blair, Nebraska; Grant White, Afton, Iowa; Hosea Wilson, Blair, Nebraska; I. J. Wilson, West Branch, Iowa.

AWARDS.

JUDGE..........................A. J. LOVEJOY, Roscow, Ill.

Boar Two Years or Over—First, High Model, 125953, Waltemeyer Bros.; second, Disturber, 43639n, H. E. Browning; third, Golden Prince, 125991, John Thompson; fourth, Col. Sensation, 98291, Ashby, Hockett & Gardner; fifth, Golden Model 31st, 125947, Waltemeyer Bros.; sixth, Evergreen Prince, 99853, Grant Lynn; seventh, Nora's Wonder, 86679, George Gawley.

Boar Eighteen Months, Under Two Years—First, Big Wonder, 125591, O. R. Stevens; second, Colonel Crimson, 128397n, H. E. Browning; third, Tormenter, 14883, Waltemeyer Bros.; fourth, Chief's Col. 30th, 129879n, H. E. Browning.

Boar One Year, Under Eighteen Months—First, King Gano, 133111, O. E. Osborn; second, I Am Golden Model 2nd, 133821, Waltemeyer Bros.; third, George Gawley; fourth, Golden Model 34th, 141023, Waltemeyer Bros.; fifth, Future Fame, 45171, Economy Stock Farm; sixth, R. J.'s Wonder, 131629, R. J. Harding; seventh, Wonder's Model, 140999, Hanks and Bishop.

Boar Six Months, Under One Year—First, H. E. Browning; second, Ma's Model, 140895, Ashby, Hockett & Gardner; third, Chief's Model 3rd, 141019, Waltemeyer Bros.; fourth, R. G.'s Giant Wonder, 140997, R. G. McDuff; fifth, Nora's Col. 140893, George Gawley; sixth, H. H. Diers.

Boar Under Six Months—First, J. S. Fawcett & Son; second, D. Nauman; third, Waltemeyer Bros.; fourth, D. Nauman; fifth, Chas. J. Shepard; sixth, J. S. Fawcett & Son.

Sow Two Years or Over—First, Robert's Model, 362130, R. J. Harding; second, Miss Flora II, 80256-a, H. E. Browning; third, W. B.'s Queen, 256856, Waltemeyer Bros.; fourth, Bell's Model, 94466-a, 323856-n, Hanks and Bishop; fifth, George Gawley; sixth, Queen Wonder, 323826, Waltemeyer Bros.; seventh, Kant's Queen, 326108, Ashby, Hockett & Gardner.

Sow Eighteen Months, Under Two Years—First, Wild Eyes, 323836, Waltemeyer Bros.; second, Helen Blazes 53rd, 362656-n, H. E. Browning; third, Lucy A., 323852-n, 94464-a, Hanks and Bishop; fourth, Tattle Tale, 362436-n, H. E. Browning; fifth, Col.'s Best, 362280, Ashby, Hockett & Gardner; sixth, Wild Eyes 2nd, 341890, Waltemeyer Bros.; seventh, Economy Fame, 362400, Economy Farm.

Sow One Year, Under Eighteen Months—First, Tattle Tale 23rd, 362654n, H. E. Browning; second, Tattle Tale 3rd, 362652n, H. E. Browning; third, Wild Eyes 4th, 341884, Waltemeyer Bros.; fourth, George Gawley; fifth, Ideal Queen, 362282, Ashby, Hockett & Gardner; sixth, Ideal Queen 2nd, 362284, Ashby, Hockett & Gardner; seventh, Sunshine's Star, 362132, R. J. Harding.

Sow Six Months, Under One Year—First, Tattle Tale 37th, 362648n, H. E. Browning; second, Tattle Tale 38th, 362650n, H. E. Browning; third, Queen Blazes, 362600, Economy Stock Farm; fourth, Dolly Dimple, 362174n, 106938a, Hanks and Bishop; fifth, Ruby Lady, 361026, Grant Lynn; sixth, Golden Queen 36th, 362578, Waltemeyer Bros.; seventh, Golden Queen 37th, 362580, Waltemeyer Bros.

Sow Under Six Months—First, D. Nauman; second, Hosea Wilson; third, Hosea Wilson; fourth, D. Nauman; fifth, Waltemeyer Bros.; sixth, Waltemeyer Bros.; seventh, J. C. Hammer.

Senior Champion Boar One Year Old or Over—Big Wonder, 125591, O. R. Stevens.

Junior Champion Boar, Under One Year—Col. Crimson, 1283972, H. E. Browning.

Senior Champion Sow One Year Old or Over—Waltemeyer Bros.

Junior Champion Sow Under One Year—H. E. Browning.

Grand Champion Duroc Boar, 1913 Iowa State Fair and Exposition, owned by O. R. Stevens, Rippey, Iowa.

Grand Champion Boar Any Age—Big Wonder, 125591, O. R. Stevens.

Grand Champion Sow Any Age—Waltemeyer Bros.

Boar and Three Sows Over One Year—First, Waltemeyer Bros.; second, H. E. Browning; third, H. E. Browning; fourth, Waltemeyer Bros.; fifth, George Gawley; sixth, R. J. Harding; seventh, Hanks & Bishop.

Boar and Three Sows Over One Year, Bred by Exhibitor—First, Waltemeyer Bros.; second, H. E. Browning; third, Waltemeyer Bros.; fourth, Hanks & Bishop; fifth, Economy Stock Farm; sixth, Ashby, Hockett & Gardner.

Boar and Three Sows Under One Year—First, H. E. Browning; second, Waltemeyer Bros.; third, Ashby, Hockett & Gardner; fourth, Economy Stock Farm; fifth, Hanks and Bishop; sixth, Grant Lynn; seventh, Waltemeyer Bros.

Boar and Three Sows Under One Year, Bred by Exhibitor—First, H. E. Browning; second, Waltemeyer Bros.; third, Ashby, Hockett & Gardner; fourth, Economy Stock Farm; fifth, Hanks and Bishop; sixth, Grant Lynn; seventh, Waltemeyer Bros.

Get of Sire—First, H. E. Browning; second, Waltemeyer Bros.; third, Waltemeyer Bros.; fourth, George Gawley; fifth, Hanks and Bishop; sixth, R. J. Harding; seventh, Ashby, Hockett & Gardner.

Produce of Sow—First, H. E. Browning; second, Waltemeyer Bros.; third, R. J. Harding; fourth, Ashby, Hockett & Gardner; fifth, Geo. Gawley; sixth, Economy Stock Farm; seventh, Hanks and Bishop.

SPECIALS OFFERED BY THE NATIONAL DUROC JERSEY RECORD ASSOCIATION.

Boar and Three Sows Over One Year, Bred by Exhibitor—First, Waltemeyer Bros.; second, Hanks and Bishop; third, Economy Stock Farm.

Boar and Three Sows Under One Year, Bred by Exhibitor—First, Waltemeyer Bros.

SPECIALS OFFERED BY THE AMERICAN DUROC JERSEY SWINE BREEDERS' ASSOCIATION.

Best Duroc Jersey Herd Under One Year Old—First, Waltemeyer Bros.; second, Hanks and Bishop; third, R. J. Harding.

Boar and Three Sows Over One Year, Bred and Owned by Exhibitor—First, Waltemeyer Bros.; second, H. E. Browning.

Boar and Three Sows Under One Year, Bred and Owned by Exhibitor—First, H. E. Browning; second, Waltemeyer Bros.

CHESTER WHITES.

EXHIBITORS.

Mr. Alden Anderson, Ellsworth, Iowa; B. M. Boyer & Sons, Farmington, Iowa; Raymond E. Brown, Dow City, Iowa; Reed Crawford, Libertyville, Iowa; J. L. Dickerson, Knoxville, Iowa; W. H. Dunbar, Jefferson, Iowa; G. L. Emmert & Sons, Mason City, Iowa; R. F. Fantz, New Hampton, Iowa; Thos. F. Kent, Walnut, Iowa; J. H. Lachmiller, Webster City, Iowa; Geo. A. Lasley, Selma, Iowa; Will Michael, Selma, Iowa; E. L. Nagel, Deep River, Iowa; John Noel, Worthing, S. Dakota; J. T. Perry, Selma, Iowa; F. M. Person, Altoona, Iowa; A. B. Somerville, Monroe, Iowa; Arthur Spear, Wellman, Iowa; J. L. Stiffsworth, Knoxville, Iowa; Jas. F. Walcott, Monroe, Iowa; E. L. Waring, Reasnor, Iowa; Wm. Whitted, Monroe, Iowa; P. H. Sheridan, Vail, Iowa.

AWARDS.

JUDGE........................WM. A. HOOVER, Oskaloosa, Iowa.

Boar Two Years or Over—First, Frank, 21957, A. B. Somerville; second, Col. Evans, 21623, E. L. Nagle & Son; third, Modeler S., 19629, Arthur Spear; fourth, Combination, 22051, Thos. F. Kent; fifth, Chief Select, 21105, Alden Anderson; sixth, Kent's Promoter, 24009, Thos. F. Kent.

Boar Eighteen Months, Under Two Years—First, Chief OK, 23985, R. F. Fantz; second, Wonder 2nd, 22667, J. H. Lachmiller; third, Highlander, 20747, Arthur Spear.

Boar One Year, Under Eighteen Months—First, White Giant, 24037, A. B. Somerville; second, First Choice, 23987, W. M. Fantz & Son; third, Sure Sign, Alden Anderson; fourth, Iowa Prince, 24013, Thos. F. Kent; fifth, Wonder Equal, 24035, A. B. Somerville; sixth, Ranger, 53700, P. H. Sheridan; seventh, Hoover's Wonder, 23635, Arthur Spear.

Boar Six Months, Under One Year—First, Chief of All, 23867, Alden Anderson; second, Emmerts Masterpiece, 23755, G. L. Emmert & Sons; third, Woodrow Wilson, 24017, Arthur Spear; fourth, Western Winner, 24085, P. H. Sheridan; fifth, Model Goods, 23981, R. F. Fantz; sixth, Bellair, 16969, E. L. Nagle & Son; seventh, O. K. Ladd, 23749, G. L. Emmert & Sons.

Boar Under Six Months—First, Wright You Are, E. L. Nagle & Son; second, A. B. Sommerville; third, Thos. F. Kent; fourth, Thos. F. Kent; fifth, Geo. A. Lasley; sixth, Raymond E. Brown; seventh, W. H. Dunbar.

Sow Two Years or Over—First, Kent's Kind, 48888, Thos. F. Kent; second, Iowa Delight, 45936, Thos. F. Kent; third, Peach Bad O. K. 29418, G. L. Emmert & Sons; fourth, Grace E. 48868, W. H. Dunbar; fifth, Autumn Star, 49028, Alden Anderson; sixth, Idelia, 24842, R. F. Fantz; seventh, White Beauty, 31306, Arthur Spear.

Sow Eighteen Months, Under Two Years—First, Myrtle B., 49152, Alden Anderson; second, Iowa Favorite, 48882, Thos. F. Kent; third, Queen of All, 28018, E. L. Nagle & Son; fourth, Snow Queen, 51788, R. F. Fantz; fifth, Maid, 53424, W. M. Fantz & Son; sixth, Rowena O. K., 31496, Arthur Spear.

Sow One Year, Under Eighteen Months—First, Hazel, 53198, G. L. Emmert & Sons; second, Miss Perfection, 53244, Alden Anderson; third, Maud S., 53426, R. F. Fantz; fourth, Big Mary, 51836, W. M. Fantz; fifth, Kent's Beauty, 53538, Thos. F. Kent; sixth, Sheridan's Pride, 53700, P. H. Sheridan; seventh, Silver Lake, 52366, W. H. Dunbar.

Sow Six Months, Under One Year—First, R. E.'s Choice, 53218, Raymond E. Brown; second, Anabell, 28430, E. L. Nagle & Son; third, Dunlap Lassie, 53220, Raymond E. Brown; fourth, Ruth, 53632, Will Michael; fifth, Viola's Secret, 53238, Alden Anderson; sixth, Kent's Pearl, 53542, Thos. F. Kent; seventh, Labell, 28432, E. L. Nagle & Son.

Sow Under Six Months—First, Flossie, E. L. Nagle & Son; second, Raymond E. Brown; third, J. L. Dickerson; fourth, W. H. Dunbar; fifth, Raymond E. Brown; sixth, J. L. Dickerson; seventh, R. F. Fantz.

Senior Champion Boar One Year Old or Over—A. B. Sommerville.

Junior Champion Boar Under One Year—Chief of All, Alden Anderson.

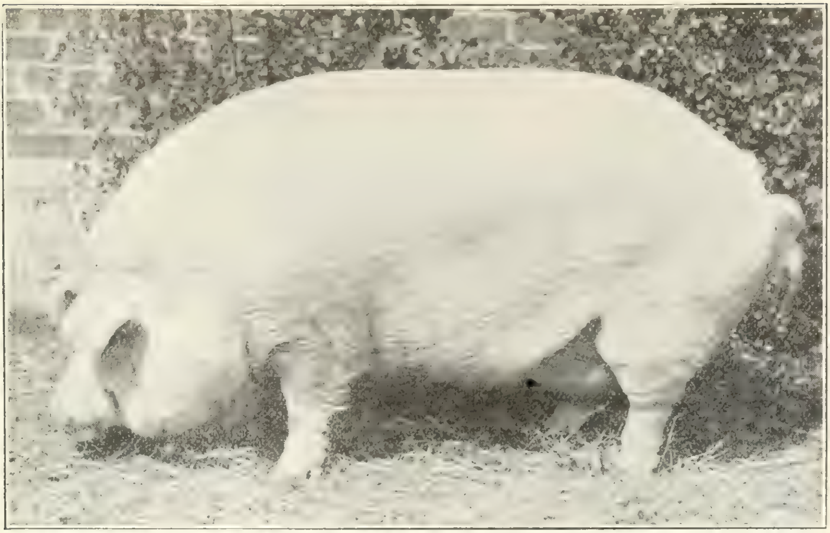
Senior Champion Sow One Year Old or Over—Thos. F. Kent.

Junior Champion Sow Under One Year—R. E.'s Choice, R. E. Brown.

Grand Champion Boar Any Age—A. B. Sommerville.

Grand Champion Sow Any Age—Thomas F. Kent.

Boar and Three Sows Over One Year—First, Thos. F. Kent; second, Alden Anderson; third, F. R. Fantz; fourth, Arthur Spear.



Prize Winning Chester White Sow, 1913 Iowa State Fair and Exposition.

Boar and Three Sows Over One Year, Bred by Exhibitor—First, Thos. F. Kent; second, Alden Anderson; third, R. F. Fantz; fourth, Arthur Spear.

Boar and Three Sows Under One Year—First, E. L. Nagle & Son; second, Alden Anderson; third, Arthur Spear; fourth, Raymond E. Brown; fifth, R. F. Fantz; sixth, J. L. Dickerson.

Boar and Three Sows Under One Year, Bred by Exhibitor—First, E. L. Nagle & Son; second, Alden Anderson; third, Arthur Spear; fourth, Raymond E. Brown; fifth, R. F. Fantz; sixth, J. L. Dickerson; seventh, Thos. F. Kent.

Get of Sire—First, Thos. F. Kent; second, E. L. Nagle & Son; third, Alden Anderson; fourth, Raymond E. Brown; fifth, Arthur Spear; sixth, Arthur Spear.

Produce of Sow—First, E. L. Nagle & Son; second, Alden Anderson; third, Raymond E. Brown; fourth, Arthur Spear; fifth, A. B. Sommerville; sixth, Thos. F. Kent; seventh, R. F. Fantz.

BERKSHIRES.

EXHIBITORS.

Nelle Fabyan, Geneva, Illinois; A. G. Forsbeck, Gray, Iowa; C. B. Grimes, Winnebago, Minnesota; Iowana Farms, Davenport, Iowa; Orlando Jacobs, New London, Iowa.

AWARDS.

JUDGE..........................N. E. GENTRY, Sedalia, Mo.

Boar Two Years or Over—First, Jewell Duke B., 161391, A. G. Forsbeck; second, Baron Premier 102nd, 172300, Iowana Farms; third, Highwood Rival, 152606, C. B. Grimes.

Boar Eighteen Months, Under Two Years—First, King of Riverbank, 178304, Nelle Fabyan.

Boar One Year, Under Eighteen Months—First, Rival's Iowana Baron 2nd, 172536, Iowana Farms; second, Rival's Iowana Baron 4th, 172538, Iowana Farms; third, King Balder II, 178671, A. G. Forsbeck; fourth, Premier Queen's Master, 165471, Orlando Jacobs; fifth, Rival's Booster, C. B. Grimes.

Boar Six Months, Under One Year—First, Iowana Majesty, 179272, Iowana Farms; second, Ames Rival 36th, 176400, Iowana Farms; third, Peter the Great 3rd, 178679, A. G. Forsbeck; fourth, Duke's Defender 3rd, 178678, A. G. Forsbeck.

Boar Under Six Months—First, A. G. Forsbeck; second, C. G. Grimes; third, C. B. Grimes.

Sow Two Years or Over—First, Rival Lady 33rd, 152787, Iowana Farms; second, Ravenwod Duchess, 152877, Iowana Farms; third, Baroness Oxford B., 158384, A. G. Forsbeck.

Sow Eighteen Months, Under Two Years—First, Queen of Riverbank, 178307, Nelle Fabyan; second, Longfellow Duchess Premier 4th, 166607, Iowana Farms; third, Rookwood Lady 52nd, 178074, Iowana Farms; fourth, Lustre's Lady Julia, 170524, Orlando Jacobs.

Sow One Year, Under Eighteen Months—First, Black Diamond 10th, 169147, A. G. Forsbeck; second, Rival's Jewell 7th, 166656, Iowana Farms; third, Rival's Jewell 2nd, 166659, Iowana Farms; fourth, Rookwood Laurel 17th, 178894, C. B. Grimes; fifth, Rookwood Laurel 18th, 178895, C. B. Grimes.

Sow Six Months, Under One Year—First, Her Ladyship, 178309, Nelle Fabyan; second, Baroness Oxford C., 178680, A. G. Forsbeck; third, Iowana Matchless Lady, 179267, Iowana Farms; fourth, Iowana Peaceful 2nd, 179237, Iowana Farms.

Sow Under Six Months—First, A. G. Forsbeck; second, C. B. Grimes.

Senior Champion Boar—Iowana Baron II, Iowana Farms.

Junior Champion Boar—Majestic Boy, Iowana Farms.

Senior Champion Sow—Rival Lady 33rd, Iowana Farms.

Junior Champion Sow—Her Ladyship, Nelle Fabyan.

Grand Champion Boar—Iowana Baron II, Iowana Farms.

Grand Champion Sow—Rival Lady 33rd, Iowana Farms.

Boar and Three Sows Over One Year—First, Iowana Farms; second, Nelle Fabyan; third, C. B. Grimes.

Boar and Three Sows Over One Year, Bred by Exhibitor—First, C. B. Grimes.

Boar and Three Sows Under One Year—First, Iowana Farms; second, A. G. Forsbeck.

Boar and Three Sows Under One Year, Bred by Exhibitor—First, Iowana Farms; second, A. G. Forsbeck.

Grand Champion Berkshire Sow, Rival Lady, 1913 Iowa State Fair and Exposition, Iowana Farms, Davenport, Iowa.

Get of Sire—First, Iowana Farms; second, Nelle Fabyan; third, C. B. Grimes; fourth, A. G. Forsbeck.

Produce of Sow—First, Nelle Fabyan; second, Iowana Farms; third, A. G. Forsbeck.

SPECIALS OFFERED BY THE AMERICAN BERKSHIRE ASSOCIATION.

Best Herd—First, Iowana Farms; second, A. G. Forsbeck.

HAMPSHIRES.

EXHIBITORS.

J. E. Beckendorf, Walnut, Iowa; W. J. Brinigar, Blythedale, Missouri; C. A. Brook, Washington, Iowa; Cary Fleagins, Bussey, Iowa; Isom J. Martin, Lancaster, Missouri; Clayton Messenger, Keswick, Iowa; J. H. Nissen, Lyons, Iowa; Saltone Stock Farm, Greensburg, Indiana; John Viggers, Eldora, Iowa; Russell Yates, Palo, Iowa; Roy E. Fisher, Winside, Nebraska.

AWARDS.

Judge......................Wilson Rowe, Davenport, Iowa.

Boar Two Years or Over—First, Messenger Boy, 6179, Clayton Messenger; second, Longfellow, 3191, Saltone Stock Farm; third, Dudie, 7847, J. H. Nissen; fourth, Monticello King, 5633, John W. Vigars; fifth, Lad for Me, 4685, J. E. Beckendorf; sixth, Roy E. Fisher; seventh, Husky, Cary Flagins.

Boar Eighteen Months, Under Two Years—First, Sweet Henry, J. E. Beckendorf; second, Teddy B. 2d, 13027, W. J. Brinigar; third, Eddie Mac, 10661, Clayton Messenger; fourth, Jupiter, 14623, Russell Yates; fifth, Danube III, Roy E. Fisher; sixth, Eddie, 10835, Cary Flagins.

Boar One Year, Under Eighteen Months—First, Lancaster Duke, 11153, W. J. Brinigar & Sons; second, Brookview Prince, 11155, Russell Yates; third, Walter J., 10859, Clayton Messenger; fourth, Sunny Jim, 10861, Clayton Messenger; fifth, Compeer of Walnut, 19550, J. E. Beckendorf; sixth, Joe Lain, 15801, J. H. Nissen; seventh, Disturber, 15279, John W. Vigars.

Boar Six Months, Under one Year—First, Sam Allen, 15671, Saltone Stock Farm; second, Pioneer Boy, 10657, Clayton Messenger; third, Blythedale Lad 3d, 15783, W. J. Brinigar; fourth, Palo Boy, 14805, Russell Yates; fifth, Billie, 15797, J. H. Nissen; sixth, Emblem, Roy E. Fisher; seventh, Woodrow Wilson, 14747, Cary Flagins.

Boar Under Six Months—First, Billy Holder, 15367, Clayton Messenger; second, Dudies Count, 15793, J. H. Nissen; third, Signet Over II, Saltone Stock Farm; fourth, Messenger's Choice, 15791, J. H. Nissen; fifth, J. E. Beckendorf; sixth, Isom J. Martin; seventh, Kirk Anthony, 11381, C. A. Brook.

Sow Two Years or Over—First, Pearl's Choice, 12870, Saltone Stock Farm; second, Blythedale Princess, 5266, W. J. Brinigar & Sons; third, Miss Scott, 13672, Clayton Messenger; fourth, Lena Mc C, 9518, J. E. Beckendorf; sixth, Bon Bon, Roy E. Fisher; seventh, Minnie, 21080, John J. Vigars.

Sow Eighteen Months, Under Two Years—First, Pride of Broadview, 28566, Saltone Stock Farm; second, Salome, 19152, Clayton Messenger; third, Western Belle, 19154, Clayton Messenger; fourth, Crestline Princess, Roy E. Fisher; fifth, Miss Fancy 2d, 24044, W. J. Brinigar & Sons; sixth, Lady Palo, 26762, Russell Yates; seventh, Bessie Burke, 19158, Saltone Stock Farm.

Sow One Year, Under Eighteen Months—First, Miss Beauty 2d, 20154, W. J. Brinigar & Sons; second, Sadie, 19352, Saltone Stock Farm; third, Lady Allen, 18924, C. A. Brook; fourth, Marie, 19424, Clayton Messenger; fifth, Lady Allen 2d, 18926, C. A. Brook; sixth, Miss Saltone, 18702, Saltone Stock Farm; seventh, Fisher's Queen III, Roy E. Fisher.

Sow Six Months, Under One Year—First, Lady Over, 28704, Saltone Stock Farm; second, Hampshire Lass, 28496, Roy E. Fisher; third, Blythedale Lass, 28904, W. J. Brinigar & Sons; fourth, Lucy Over, 28710, Saltone Stock Farm; fifth, Lady Courtland, 26458, C. A. Brooks; sixth, Evelyn, 28668, Clayton Messenger; seventh, Lady Courtland 2d, 26400, C. A. Brook.

Sow Under Six Months—First, Gertrudis, 26450, C. A. Brook; second, Gertrudis 2d, 36452, C. A. Brooks; third, W. J. Brinigar & Sons; fourth, Saltone Stock Farm; fifth, Saltone Stock Farm; sixth, Maude McKee, 28128, Clayton Messenger; seventh, Laura, 28132, Clayton Messenger.

Senior Champion Boar One Year or Over—Messenger Boy, Clayton Messenger.

Junior Champion Boar, Under One Year—Sam Allen, Saltone Stock Farm.

Senior Champion Sow, One Year or Over—Pearle Choice, Saltone Stock Farm.

Junior Champion Sow, Under one Year—Lady Over, Saltone Stock Farm.

Grand Champion Boar, Any Age—Messenger Boy, Clayton Messenger.

Grand Champion Sow, Any Age—Pearl's Choice, Saltone Stock Farm.

Boar and Three Sows Over One Year—First, Saltone Stock Farm; second, W. J. Brinigar & Sons; third, Clayton Messenger; fourth, C. A. Brook, fifth, Clayton Messenger; sixth, Roy E. Fisher.

Boar and Three Sows Over One Year, Bred by Exhibitor—First, W. J. Brinigar & Sons; second, Clayton Messenger; third, Clayton Messenger; fourth, Roy E. Fisher; fifth, Roy E. Fisher.

Boar and Three Sows, Under One Year—First, Saltone Stock Farm; second, Roy E. Fisher; third, W. J. Brinigar & Sons; fourth, Clayton Messenger; fifth, J. H. Nissen; sixth, C. A. Brook; seventh, C. A. Brook.

Boar and Three Sows, Under One Year, Bred by Exhibitor—First, Saltone Stock Farm; second, W. J. Brinigar & Sons; third, Clayton Messenger; fourth, J. H. Nissen; fifth, C. A. Brook; sixth, Isom J. Martin; seventh, Clayton Messenger.

Get of Sire—First, Saltone Stock Farm; second, W. J. Brinigar & Sons; third, Clayton Messenger; fourth, J. H. Nissen; fifth, C. A. Brook; sixth, Roy E. Fisher; seventh, Isom J. Martin.

Produce of Sow—First, Saltone Stock Farm; second, W. J. Brinigar & Sons; third, Clayton Messenger; fourth, J. H. Nissen; fifth, C. A. Brook; sixth, Roy E. Fisher; seventh, Isom J. Martin.

LARGE YORKSHIRES.

EXHIBITORS.

F. M. Buck, LaPorte, Indiana; B. F. Kunkle, Redfield, Iowa; T. I. Manley, Guthrie Center, Iowa; B. F. Davidson, Menlo, Iowa.

AWARDS.

JUDGE............................C. C. ROUP, Kalona, Iowa.

Boar Two Years or Over—First, Dan D. Stuff, 17135, T. I. Manley; second, Lake Park Navigator, 12161, B. F. Kunkle.

Boar Eighteen Months, Under Two Years—First, Oak Grove Royal, 16412, B. F. Kunkle; second, Lake Park Dude, 16588, F. M. Buck.

Boar One Year, Under Eighteen Months—First, Lake Park Eventop 12, 16820, B. F. Davidson; second, Oak Dale Lad 3d, 16688, F. M. Buck; third, Oak Grove Ladd 5th, 17462, B. F. Kunkle; fourth, Oak Grove Lad 6th, 17463, B. F. Kunkle; fifth, Prairie Chancellor 3d, 17183, F. M. Buck.

Boar Six Months, Under One Year—First, Oak Grove Ladd 7th, 17469, B. F. Kunkle; second, Oak Grove Ladd 8th, 17470, B. F. Kunkle; third, Prairie Lea Bob, 18267, F. M. Buck; fourth, Right Stuff, 18244, T. I. Manley; fifth, Mondamin Gem's Pride 3d, 18271, F. M. Buck.

Boar, Under Six Months—First, Dear Creek Meddler 1st, B. F. Davidson; second, Oak Grove Rex, 12th, B. F. Kunkle; third, F. M. Buck; fourth, Oak Grove Ladd 10th, B. F. Kunkle; fifth, Deer Creek Sunlight 2d, B. F. Davidson; sixth, F. M. Buck.

Sow Two Years or Over—First, Deer Creek Martha 10th, 14977, B. F. Kunkle; second, Deer Creek Topsy Queen 1st, 15648, B. F. Davidson; sixth, Prairie Gem, 12679, F. M. Buck.

Sow Eighteen Months, Under Two Years—First, Oak Grove Model 4th, 16410, B. F. Kunkle; second, Lake Park Augustine, III, 16587, F. M. Buck.

Sow One Year, Under Eighteen Months—First, Oak Park Model 10th, 17464, B. F. Kunkle; second, Mondamin Gem 3d, 17179, F. M. Buck; third, Oak Park Model 11th, 17465, B. F. Kunkle; fourth, Fan C. Stuff, 18246, T. I. Manley; fifth, Gem of the Lea 3d, 17353, F. M. Buck.

Sow Six Months, Under One Year—First, Oak Park Pearl, 17467, B. F. Kunkle; second, Oak Park Pearl 2d, 17468, B. F. Kunkle; third, Pride's Gem, 18270, F. M. Buck; fourth, Fan C. Stuff, 18245, T. I. Manley; fifth, Prairie Lea Augustine, 18268, F. M. Buck.

Sow, Under Six Months—First, Deer Creek Nema 1st, B. F. Davidson; second, Deer Creek Nema 2d, B. F. Davidson; third, Oak Park Pearl 4th, B. F. Kunkle; fourth, F. M. Buck; fifth, Oak Park Pearl 5th, B. F. Kunkle; sixth, F. M. Buck.

Senior Champion Boar, One Year Old or Over—Dan D. Stuff, T. I. Manley.

Junior Champion Boar, Under One Year—Oak Grove Ladd VII, B. F. Kunkle.

Senior Champion Sow, One Year Old or Over—Deer Creek Martha V, B. F. Kunkle.

Junior Champion Sow, Under One Year—Deer Creek Nema 1st, B. F. Davidson.

Grand Champion Boar, Any Age—Dan D. Stuff, T. I. Manley.

Grand Champion Sow, Any Age—Deer Creek Martha V, B. F. Kunkle.

Boar and Three Sows Over One Year—First, B. F. Kunkle; second, T. I. Manley; third, F. M. Buck.

Boar and Three Sows Over One Year, Bred by Exhibitor—First, B. F. Kunkle; second, T. I. Manley; third, F. M. Buck.

Boar and Three Sows, Under One Year—First, B. F. Kunkle; second, B. F. Davidson; third, F. M. Buck; fourth, B. F. Davidson.

Boar and Three Sows, Under One Year, Bred by Exhibitor—First, B. F. Kunkle; second, B. F. Davidson; third, F. M. Buck; fourth, B. F. Davidson.

Get of Sire—First, B. F. Kunkle; second, B. F. Davidson; third, F. M. Buck; fourth, B. F. Davidson.

Produce of Sow—First, B. F. Kunkle; second, B. F. Davidson; third, F. M. Buck.

SPECIALS OFFERED BY AMERICAN YORKSHIRE CLUB.

Young Herd—First, B. F. Kunkle; second, B. F. Davidson; third, F. M. Buck; fourth, B. F. Davidson.

TAMWORTH.

EXHIBITOR.

J. B. Mackoy, Farragut, Iowa.

AWARDS.

JUDGE........................C. C. ROUP, Kalona, Iowa.

Boar Two Years or Over—First, Greenwood Amber 8169.

Boar One Year, Under Eighteen Months—First, J. B.'s Mastodon, 12006.

Boar Six Months, Under One Year—First, Cedar Crest Contestor, 13915; second, Shannock 2d, 13916.

Boar, Under Six Months—First, and second.

Sow Two Years or Over—First, Glenary Lettre, 7582.

Sow Eighteen Months, Under Two Years—First, Fancy 13th, 13444.

Sow One Year, Under Eighteen Months—First, Olga Nethersole, 12009; second, Corrector's Best, 13919.

Sow Six Months, Under One Year—First, Lady Lou, 13917.

Sow, Under Six Months—First, and second.

Senior Champion Boar, One Year Old or Over—Greenwood Amber, 8169.

Junior Champion Boar, Under One Year—Cedar Crest Contestor, 13915.

Senior Champion Sow, One Year Old or Over—Glenary Letters, 7582.

Junior Champion Sow, Under One Year—Lady Lou, 13917.

Grand Champion Boar, Any Age—Greenwood Amber, 8169.

Grand Champion Sow, Any Age—Glenary Lettre, 7582.

Boar and Three Sows Over One Year—First.

Boar and Three Sows, Under One Year—First.

Boar and Three Sows, Under One Year, Bred by Exhibitor—First.

Get of Sire.—First.

Produce of Sow—First.

SHEEP DEPARTMENT.

SUPERINTENDENT.............M. G. THORNBURG, Ames, Iowa.

MERINOS, AMERICAN, SPANISH OR DELAINE.

EXHIBITORS.

F. W. Cook, West Mansfield, Ohio; Geo. A. Phillippi, Welcome, Wisconsin; S. Rail & Sons, Birmingham, Iowa; H. L. Russell, West Grove, Iowa; F. F. & V. G. Warner, Bloomfield, Iowa.

AWARDS.

JUDGE............................J. E. WEBB, Southport, Ind.

Ram Two Years Old or Over—First, and second, F. W. Cook; third, S. Rail & Sons.

Ram One Year Old and Under Two—First, F. W. Cook, second, Phillippi's No. 17, Geo. A. Phillippi; third, S. Rail & Sons.

Ram Lamb—First and second, F. W. Cook; third, S. Rail & Sons.

Ewe Two Years Old or Over—First and second, F. W. Cook; third, H. L. Russell.

Ewe One Year Old and Under Two—First and second, F. W. Cook; third, S. Rail & Sons.

Ewe Lamb—First, F. W. Cook; second, Phillippi's 19, 105011, Geo. A. Phillippi; third, S. Rail & Sons.

Champion Ram, Any Age—F. W. Cook.

Champion Ewe, Any Age—F. W. Cook.

Pen of Lambs—First, F. W. Cook; second, S. Rail & Sons; third, F. F. & V. G. Warner.

Flock—First, F. W. Cook; second, S. Rail & Sons; third, Geo. A. Phillippi.

IOWA SPECIALS OFFERED FOR MERINO, AMERICAN, SPANISH OR DELAINE SHEEP.

Ram Two Years Old or Over—First and second, S. Rail & Sons; third, H. L. Russell.

Ram One Year Old and Under Two—First and third, S. Rail & Sons; second, F. F. & V. G. Warner.

Ram Lamb—First, S. Rail & Sons; second and third, F. F. & V. G. Warner.

Ewe Two Years Old or Over—First, H. L. Russell; second, F. F. & V G. Warner; third, S. Rail & Sons.

Ewe One Year Old and Under Two—First, S. Rail & Sons; second, F. F. & V. G. Warner; third, H. L. Russell.

Ewe Lamb—First, F. F. & V. G. Warner; second, S. Rail & Sons; third, F. F. & V. G. Warner.

Champion Ram, Any Age—S. Rail & Sons.

Champion Ewe, Any Age—F. F. & V. G. Warner.

Pen of Lambs—First, S. Rail and Sons; second, F. F. & V. G. Warner.

Flock—First, S. Rail & Sons; second, H. L. Russell; third, F. F. & V. G. Warner.

RAMBOUILLET.

EXHIBITORS.

F. S. King Bros. Co., Laramie, Wyoming; Geo. A. Phillippi, Welcome Wisconsin.

AWARDS.

JUDGE........................J. E. WEBB, Southport, Ind.

Ram Two Years Old or Over—First and second, F. S. King Bros. Co.; third, F. W. Cook.

Ram One Year Old, Under Two—First, F. M. Cook; second and third, F. S. Kink Bros. Co.

Ram Lamb—First and second, F. S. King Bros. Co.; third, F. W. Cook.

Ewe Two Years Old or Over—First and second, F. S. King Bros. Co.; third, F. W. Cook.

Champion Rambouillet Ram, 1913 Iowa State Fair and Exposition, F. S. King Bros., Laramie, Wyo.

Ewe One Year Old and Under Two—First and third, F. S. King Bros. Co.; second, F. W. Cook.

Ewe Lamb—First and second, F. S. King Bros. Co.; third, F. W. Cook.

Ram Any Age—F. S. King Bros. Co.

Ewe Any Age—F. S. King Bros. Co.

Pen of Lambs—First, F. S. King Bros. Co.; second, F. W. Cook; third, Geo. A. Phillippi.

Flock—First, F. S. King Bros. Co.; second, F. W. Cook; third, Geo. A. Phillippi.

COTSWOLD.

EXHIBITORS.

Anoka Farms, Waukesha, Wisconsin; Alex W. Arnold, Galesville, Wisconsin; W. A. Taylor & Son, Ames, Iowa.

AWARDS.

JUDGE..........................J. E. WEBB, Southport, Ind.

Ram Two Years Old or Over—First and second, Alexander Arnold; third, W. A. Taylor & Son.

Ram One Year Old and Under Two—First, Alex. W. Arnold.

Ram Lamb—First and second, Alex. W. Arnold; third, W. A. Taylor & Son.

Ewe Two Years Old or Over—First and second, Alexander W. Arnold; third, W. A. Taylor & Son.

Ewe One Year Old and Under Two—First, Alexander W. Arnold.

Ewe Lamb—First and second, Alexander W. Arnold; third, W. A. Taylor & Son.

Champion Ram, Any Age—Alex. W. Arnold.

Champion Ewe, Any Age—Alex. W. Arnold.

Pen of Lambs—First, Alex. W. Arnold.

Flock—First, Alexander W. Arnold.

LINCOLN.

EXHIBITORS.

Alex. W. Arnold, Galesville, Wisconsin; L. H. Manley, Hortonville, Wisconsin.

AWARDS.

JUDGE.......................... J. E. WEBB, Southport, Ind.

Ram Two Years Old or Over—First and second, Alex. W. Arnold; third, L. H. Manley.

Ram One Year Old and Under Two—First, L. H. Manley; second, Alex. W. Arnold; third, L. H. Manley.

Ram Lamb—First and second, Alex. W. Arnold; third, L. H. Manley.

Ewe Two Years Old or Over—First, L. H. Manley; second and third, Alex. W. Arnold.

Ewe One Year Old and Under Two—First and second, Alex. W. Arnold; third, L. H. Manley.

Ewe Lamb—First, L. H. Manley; second and third, Alex. W. Arnold.

Champion Ram, Any Age—Alex. W. Arnold.

Champion Ewe, Any Age—Alex. W. Arnold.

Pen of Lambs—First, L. H. Manley; second, Alex. Arnold.

Flock—First, Alex. W. Arnold; second, L. H. Manley.

HAMPSHIRE DOWNS.

EXHIBITOR.

Alex. W. Arnold, Galesville, Wisconsin.

AWARDS.

JUDGE..............JOHN CAMPBELL, Woodville, Ont., Canada.

Ram One Year Old and Under Two—First and second.

Ram Lamb—First and second.

Ewe Two Years Old or Over—First and second.

Ewe One Year Old and Under Two—First and second.

Ewe Lamb—First and second.

Champion Ram, Any Age—First.

Champion Ewe, Any Age—First.

Pen of Lambs—First.

Flock—First.

Champion Hampshire Ram, 1913 Iowa State Fair and Exposition, owned by Alexander W. Arnold, Galesville, Wis.

SHROPSHIRE.

EXHIBITORS.

E. L. Bitterman, Mason City, Iowa; Harry Eddingfield, Mt. Pleasant; J. S. Fawcett & Son, Springdale, Iowa; L. Kammerer, Brodhead, Wisconsin; Geo. McKerrow & Son, Pewaukee, Wisconsin; W. A. Taylor & Son, Ames, Iowa.

AWARDS.

JUDGE..............JOHN CAMPBELL, Woodville, Ont. Canada.

Ram Two Years Old or Over—First, Nock's 10, Geo. McKerrow & Sons; second, Cavendish 274, Geo. McKerrow & Sons; third, Eddingfield 54, 361470, Harry Eddingfield; fourth, Fawcetts' 216, 377476, J. S. Fawcett & Son.

Ram One Year Old and Under Two—First, Kellock, 673, Geo. McKerrow & Sons; second, Simons, 786, Geo. McKerrow & Sons; third, East View's Ideal, 376627, E. L. Bitterman; fourth, Eddingfield, 102, 361474, Harry Eddingfield.

Ram Lamb—First, Fawcetts' 286, 376651, J. S. Fawcett & Son; second, R. C. P. 23, Geo. McKerrow & Sons; third, W. A. T. 144, 376825, W. A. Taylor & Son; fourth, East View's Eclipse, 376633, E. L. Bitterman.

Ewe Two Years Old or Over—First, G. Mc 2220, 343916, Geo. McKerrow & Sons; second, R. W. N. 72, 343908, Geo. McKerrow & Sons; third, Eddingfield 52, 364241, Harry Eddingfield; fourth, Maple Grove Butterfly, 322043, W. A. Taylor & Son.

Ewe One Year Old and Under Two—First, Duke of Westminister, Geo. McKerrow & Sons; second, Simons 792, Geo. McKerrow & Sons; third, Carston's Gift, E. L. Bitterman; fourth, Fawcetts' 282, 376646.

Ewe Lamb—First, R. C. Price's 45, Geo. McKerrow & Sons; second, Valley Home Beauty, 376913, Harry Eddingfield; third, R. C. Price's 35, Geo. McKerrow & Sons; fourth, East View's 603, 376847, E. L. Bitterman.

Champion Ram, Any Age—Kellock 673, Geo. McKerrow & Sons.

Champion Ewe, Any Age—Duke of Westminister, Geo. McKerrow & Sons.

Pen of Lambs—First, J. S. Fawcett & Son; second, W. A. Taylor & Son; third, Harry Eddingfield; fourth, E. L. Bitterman.

Flock—First, Geo. McKerrow & Sons; second, Harry Eddingfield; third, J. S. Fawcett & Son; fourth, E. L. Bitterman; fifth, W. A. Taylor & Son.

SPECIALS OFFERED FOR IOWA SHROPSHIRES.

Ram Two Years or Over—First, Eddingfield 54, 361470, Harry Eddingfield; second, Fawcetts 216, 377476, J. S. Fawcett & Son; third, Maple Grove Heir, 342437, W. A. Taylor & Son; fourth, East View's Station, 369028, E. L. Bitterman.

Ram One Year Old and Under Two—First, East View's Ideal, 376627, E. L. Bitterman; second, Eddingfield 102, 361475, Harry Eddingfield; third, Fawcetts 279, 362380, J. S. Fawcett & Son; fourth, Maple Grove Echo, 361889, W. A. Taylor & Son; fifth, Fawcetts 281, 376645, J. S. Fawcett & Son.

Ram Lamb—First, W. A. T. 144, 376825, W. A. Taylor & Son; second, East View's Eclipse, 376633, E. L. Bitterman; third, Valley Home Choice, 376914, Harry D. Eddingfield; fourth, East View's Block, 376632, E. L. Bitterman; fifth, Valley Home Duke, 376919, Harry Eddingfield.

Ewe Two Years Old or Over—First, Eddingfield 52, 364241, Harry Eddingfield; second, Eddingfield 51, 361463, Harry Eddingfield; third, Fawcetts 234, 322419, J. S. Fawcett & Son; fourth, Maple Grove Butterfly, 322043, W. A. Taylor & Son; fifth, Maple Grove Homespun, 322028, W. A. Taylor & Son.

Ewe One Year Old and Under Two—First, Fawcetts' 282, 376646, J. S. Fawcett & Son; second, East View's Mearl, 376631, E. L. Bitterman; third, Maple Grove Alberta, 361893, W. A. Taylor & Son; fourth, East View's Mearl, 376631, E. L. Bitterman; fifth, Fawcetts' 283, 376648, J. S. Fawcett & Son.

Ewe Lamb—First, Valley Home Beauty, 376913, Harry D. Eddingfield; second, East View's 603, 376847, E. L. Bitterman; third, Fawcetts' 284, 376649, J. S. Fawcett & Son; fourth, Fawcetts' 285, 376650, J. S. Fawcett & Son; fifth, W. A. T. 142, 376827, W. A. Taylor & Son.

Chamion Ram, Any Age—Eddingfield 54, 361470, Harry Eddingfield.

Champion Ewe, Any Age—Eddingfield 52, 364241, Harry Eddingfield.

Pen of Lambs—First, W. A. Taylor & Son; second, Harry Eddingfield; third, E. L. Bitterman.

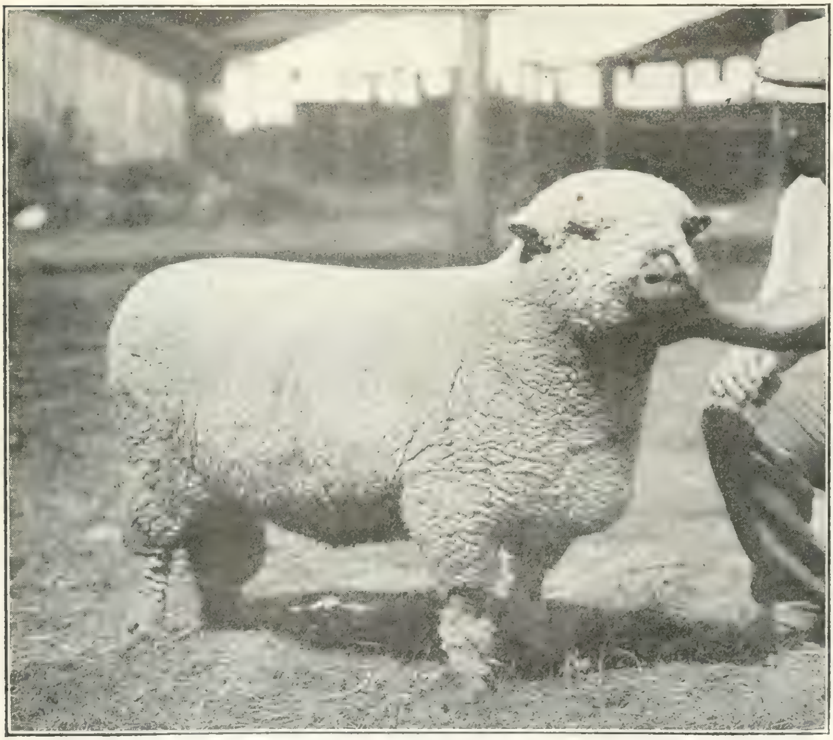
Flock—First, Harry Eddingfield; second, John Fawcett & Son; third, E. L. Bitterman; fourth, W. A. Taylor & Son.

SPECIALS BY AMERICAN SHROPSHIRE REGISTRY ASSOCIATION.

Ram Two Years Old or Over—First, Eddingfield 54, 361470, Harry Eddingfield; second, Fawcetts' 216, 377476, J. S. Fawcett & Son; third, Blue blood 304, 342738, W. A. Taylor & Son; fourth, Maple Grove Heir 342437, W. A. Taylor & Son.

Ram One Year Old and Under Two—First, East View's Ideal, 376627, E. L. Bitterman; second, Eddingfield, 102, 361474, Harry Eddingfield; third, Fawcetts' 279, 362380, J. S. Fawcett & Son; fourth, W. A. T. 110, 361889, W. A. Taylor & Son.

Ram Lamb—First, Fawcetts' 286, 376651, J. S. Fawcett & Son; second, W. A. T. 144, 376825, W. A. Taylor & Son; third, East View's Eclipse, 376633, E. L. Bitterman; fourth, Valley Home Choice, 376914, Harry Eddingfield.



Champion Shropshire Ram, 1913 Iowa State Fair and Exposition, owned by George W. McKerrow & Sons, Pewaukee, Wis.

Ewe One Year Old and Under Two—First, Fawcetts' 282, 376646, J. S. Fawcett & Son: second, East View's Marie, 376630, E. L. Bitterman; third, W. A. T. 104, 361893, W. A. Taylor & Son; fourth, East View's Mearl, 376631, E. L. Bitterman.

Ewe Lamb—First, Valley Home Beauty, 376913, Harry Eddingfield; second, East Views 603, 376847, E. L. Bitterman; third, Fawcetts' 284, 376649, J. S. Fawcett & Son; fourth, Fawcetts' 285, 376650, J. S. Fawcett & Son.

Champion Ram, Any Age—Eddingfield 54, 361470, Harry Eddingfield.

Champion Ewe, Any Age—Valley Home Beauty, 376913, Harry Eddingfield.

Pen of Lambs, Bred by Exhibitor—First, J. S. Fawcett & Son; second, W. A. Taylor & Son; third, Harry Eddingfield; fourth, E. L. Bitterman.

SWEEPSTAKES.

Best Ram All Mutton Breeds—Eddingfield 54, 361470, Harry D. Eddingfield.

Best Ewe All Mutton Breeds—Eddingfield 52, 364241, Harry Eddingfield.

OXFORD DOWNS.

EXHIBITORS.

C. C. Croxen, Atalissa, Iowa; John Graham & Son, Eldora, Iowa; Geo. McKerrow & Sons, Pewaukee, Wisconsin.

AWARDS.

JUDGE..............JOHN CAMPBELL, Woodville, Ont., Canada.

Ram Two Years Old or Over—First and second, Geo. McKerrow & Son; third, C. C. Croxen; fourth, Graham's 666, 50235, John Graham & Son.

Ram One Year Old, Under Two—First and second, Geo. McKerrow & Sons; third, C. C. Croxen; fourth, Jno. Graham & Son.

Ram Lamb—First and second, Geo. McKerrow & Sons; third, C. C. Croxen; fourth, John Graham & Son.

Ewe Two Years Old or Over—First, Geo. McKerrow & Sons; second, C. C. Croxen; third and fourth, John Graham & Son.

Ewe One Year Old, Under Two—First and second, Geo. McKerrow & Sons; third, John Graham & Son; fourth, C. C. Croxen.

Ewe Lamb—First and second, Geo. McKerrow & Son; third and fourth, John Graham & Son.

Champion Ram, Any Age—Geo. McKerrow & Sons.

Champion Ewe, Any Age—Geo. McKerrow & Sons.

Pen of Lambs—First, C. C. Croxen; second and third, John Graham & Son.

Flock—First, Geo. McKerrow & Sons; second, C. C. Croxen; third, John Graham & Son.

SPECIALS OFFERED FOR OXFORD SHEEP OWNED AND BRED IN IOWA.

Ram Two Years Old or Over—First and fourth, C. C. Croxen; second and third, John Graham & Son.

Ram One Year Old, Under Two—First and third, C. C. Croxen; second and fourth, John Graham & Son.

Ram Lamb—First and third, C. C. Croxen; second and fourth, John Graham & Son.

Ewe Two Years Old or Over—First and fourth, C. C. Croxen; second and third, John Graham & Son.

Ewe One Year Old, Under Two—First and third, John Graham & Son; second and fourth, C. C. Croxen.

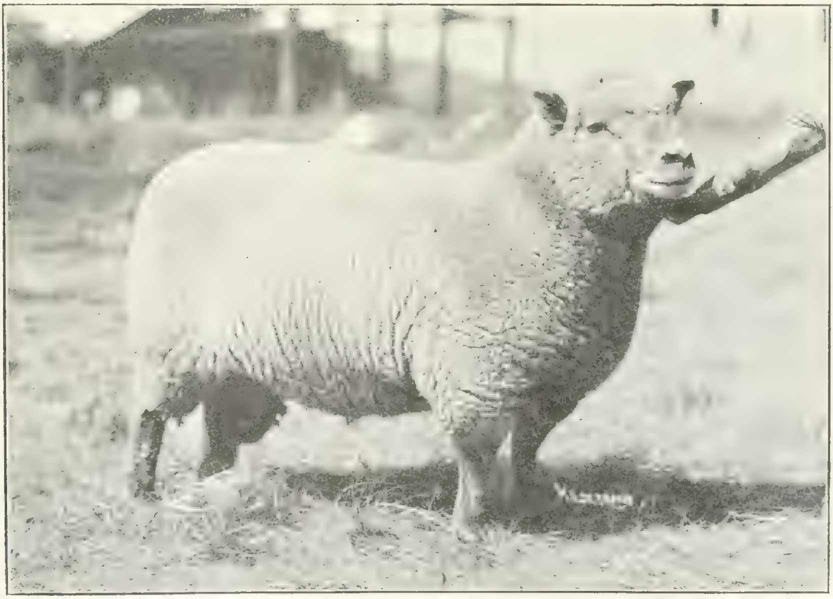
Ram One Year Old, Under Two—First, Alex. W. Arnold; second, Geo. Graham & Son.

Champion Ram, Any Age—C. C. Croxen.

Champion Ewe, Any Age—C. C. Croxen.

Pen of Lambs—First and third, John Graham & Son; second, C. C. Croxen.

Flock—First, C. C. Croxen; second, John Graham & Son.



Champion Southdown Ram, 1913 Iowa State Fair and Exposition, owned by A. W. Arnold, Galesville, Wis.

SOUTH DOWN.

EXHIBITORS.

Alex. W. Arnold, Galesville Wisconsin; R. F. Fantz, New Hampton, Iowa.

AWARDS.

JUDGE..............JOHN CAMPBELL, Woodville, Ont., Canada.

Ram Two Years Old or Over—First, Fantz 49, R. F. Fantz; second, Alex. W. Arnold.

Ram One Year Old, Under Two—First, Alex. W. Arnold; second, Geo. A. Phillippi.

Ram Lamb—First, Fantz 57, R. F. Fantz; second, Fantz 60, R. F. Fantz.

Ewe Two Years Old or Over—First, Alex. W. Arnold; second, Geo. A. Phillippi; third, Wis. Ex. Station 696, Geo. A. Phillippi.

Ewe One Year Old, Under Two— First, Alex. W. Arnold; second, Geo. A. Phillippi; third, Fantz 56, R. F. Fantz.

Ewe Lamb—First, Alex. W. Arnold; second, Geo. A. Phillippi; third, Fantz 62, R. F. Fantz.

Champion Ram, Any Age—Alex. W. Arnold.

Champion Ewe, Any Age—Alex. W. Arnold.

Pen of Lambs—R. F. Fantz.

Flock—First, Alex. W. Arnold; second, Geo. A. Phillippi; third, R. F. Fantz.

DORSET.

EXHIBITOR.

Alex. W. Arnold, Galesville, Wisconsin.

AWARDS.

JUDGE........................J. E. WEBB, Southport, Ind.

Ram One Year Old, Under Two—First.

Ewe Two Years Old or Over—First.

Ewe One Year Old, Under Two—First.

Ewe Lamb—First.

Champion Ram, Any Age—First.

Champion Ewe, Any Age—First.

Flock—First.

CHEVIOT.

EXHIBITORS.

Alex. W. Arnold, Galesville, Wisconsin; R. W. Postle, Camp Chase, Ohio.

AWARDS.

JUDGE..............JOHN CAMPBELL, Woodville, Ont., Canada.

Ram Two Years Old or Over—First and second, R. & W. Postle.

Ram One Year Old, Under Two—First and second, R. & W. Postle.

Ram Lamb—First and second, R. & W. Postle.

Ewe Two Years Old or Over—First and second, R. & W. Postle.

Ewe One Year Old and Under Two—First and second, R. & W. Postle.

Ewe Lamb—First and second, R. & W. Postle.

Champion Ewe, Any Age—First, R. & W. Postle.

Pen of Lambs—First, R. W. Postle.

Flock—First, R. & W. Postle.

POULTRY.

E. L. BECK, SUPERINTENDENT..................Ames, Iowa.

AMERICANS.

EXHIBITORS.

Verne Argo, Tipton, Iowa; Jesse Alexander, Altoona, Iowa; A. L. Anderson, Indianola, Iowa; Mrs. N. B. Ashby, Des Moines, Iowa; A. & J. W. Boyt, Des Moines, Iowa; J. A. Ash, Norwalk, Iowa; L. Bartlett, Scranton, Iowa; Matt Baldwin, Sioux City, Iowa; Mrs. H. I. Branson, West Branch, Iowa; R. R. Blake, Waukee, Iowa; Brown Poultry Company, Sioux City, Iowa; B. F. Benson, Winfield, Iowa; Mrs. W. B. Beatty, Des Moines, Iowa; C. A. Barquist, Des Moines, Iowa; J. M. Brown, St. Charles, Iowa; L. Bartlett, Des Moines, Iowa; Mrs. O. C. Bierma, Altoona, Iowa; W. E. Cowan, Waterloo, Iowa; Dr. L. D. Carpenter, Indianola, Iowa; Frank Chalupa, Pleasant Plain, Iowa; Dr. W. J. Duncan, Winfield, Iowa; Joe F. Denburger, Des Moines, Iowa; A. E. Edwards, Scranton, Iowa; N. W. Falk, Oelwein, Iowa; J. F. Harsh, New Virginia, Iowa; T. H. Hall, Des Moines, Iowa; Hanson's Poultry Farm, Dean, Iowa; Frank Harris, Des Moines, Iowa; Elmer E. Heifner, Des Moines, Iowa; I. E. Hubler & Son, Marshalltown, Iowa; W. C. Hengen, Ottumwa, Iowa; C. W. Howell, Des Moines, Iowa; W. D. Israel, Des Moines, Iowa; Frank Johnson, Monroe, Iowa; A. B. Jordon, Moravia, Iowa; R. S. Jackson, Muscatine, Iowa; Kellogg & Kellogg, Cambridge, Illinios; Carl Koenigsberger, Des Moines, Iowa; Wm. J. Lockhart, Des Moines, Iowa; Wm. McMichael, Des Moines, Iowa; Ernest Massey, Mystic, Iowa; Thos. Morlan, Indianola, Iowa; A. L. Moore, Norway, Iowa; J. V. Pfander & Son, Clarinda, Iowa; Jno. Peterson, Randall, Iowa; Elliott Purmort, Des Moines, Iowa; F. G. Paul, Marshalltown, Iowa; F. L. Reinhard & Son, Ottumwa, Iowa; C. W. Reeder, Leon, Iowa; Mart Rahn, Clarinda, Iowa; R. B. Rowe, Indianola, Iowa; J. D. Reid, Tipton, Iowa; L. J. Schuster, Des Moines, Iowa; Julius Sinn, Williamsburg, Iowa; Howard Shane, Williamsburg, Iowa; J. L. Todd, Des Moines, Iowa; Taylor Bros., Cambridge, Illinois; Trio Poultry Farm, Des Moines, Iowa; Wm. Winnike, Carroll, Iowa; Geo. F. White, Berwick, Iowa; F. F. & V. G. Warner, Bloomfield, Iowa; Mrs. A. M. Walrath, Des Moines, Iowa; Ben Woolgar, Altoona, Iowa.

AWARDS.

JUDGE.......................W. S. RUSSELL, Ottumwa, Iowa.
FRED H. SHELLABARGER, West Liberty, Iowa.

Barred Plymouth Rock Cock, Cockerel Bred—First (23841), Wm. Winnike; second (6535), W. E. Cowan; third (21), J. V. Pfander & Son.

Barred Plymouth Rock Cockerel, Cockerel Bred—First (11), Wm. Winnike; second (6700), C. E. Cowan; third, Wm. McMichael.

Barred Plymouth Rock Hen, Cockerel Bred—First (177), J. B. Pfander & Son; second (274), J. F. Harsh; third (22), Wm. McMichael.

Barred Plymouth Rock Pullet, Cockerel Bred—First (29), J. F. Harsh; second (66), W. E. Cowan; third (53), W. E. Cowan.

Barred Plymouth Rock Cock, Pullet Bred—First, T. L. Todd; second (1), J. F. Harsh; third (4725), Wm. Winnike.

Barred Plymouth Rock Cockerel, Pullet Bred—First (836), Jno. Peterson; second (835), Jno. Peterson; third (837), Jno. Peterson.

Barred Plymouth Rock Hen, Pullet Bred—First (6), Wm. Winnike; second (307), J. F. Harsh; third (14), Mrs. H. I. Branson.

Barred Plymouth Rock Pullet, Pullet Bred—First (73), Jno. Peterson; second (75), Jno. Peterson; third (71), Jno. Peterson.

White Plymouth Rock Cock—First (387), N. W. Falk.

White Plymouth Rock Cockerel—First (457), Brown Poultry Company; second (451), Brown Poultry Co.; third (77), Frank Johnson.

White Plymouth Rock Hen—First (3470), N. W. Falk; second (170), J. F. Pfander & Son.

White Plymouth Rock Pullet—First (87), Frank Johnson; second (160), J. V. Pfander & Sons; third (27), Verne E. Argo.

Buff Plymouth Rock Cock—First (1), Wm. J. Lockhart; second (2), Wm. J. Lockhart; third (7), Dr. W. J, Duncan.

Buff Plymouth Rock Cockerel—First (35), Verne E. Argo; second (7), W. J. Lockhart; third (8415), Kellogg & Kellogg.

Buff Plymouth Rock Hen—First (51), T. H. Hall; second (696), Joe T. Denburger; third (6), Wm. J. Lockhart.

Buff Plymouth Rock Pullet—First (8436), Kellogg & Kellogg; second (10), Wm. J. Lockhart; third (9), Wm. J. Lockhart.

Partridge Plymouth Rock Cock—First (161), L. J. Schuster; second (162), L. J. Schuster; third (1), A. E. Edwards.

Partridge Plymouth Rock Cockerel—First (163), L. J. Schuster; second (1247-f), Taylor Bros.; third (164), L. J. Schuster.

Partridge Plymouth Rock Hen—First (167), L. J. Schuster; second (434), Taylor Bros.; third (93), Jesse Alexander & Co.

Partridge Plymouth Rock Pullet—First (7725), Taylor Bros.; second (0291), Taylor Bros.; third (169), L. J. Schuster.

Silver Wyandotte Cock—First (1199), F. F. & V. G. Warner; second (63), Trio Poultry Farm; third, Hanson Poultry Farm.

Silver Wyandotte Cockerel—First (83), Trio Poultry Farm; second (85), Trio Poultry Farm; third (2338-u), A. L. Anderson.

Silver Wyandotte Hen—First (1039), F. F. & V. G. Warner; second (3810), Trio Poultry Farm; third (1026), F. F. & V. G. Warner.

Silver Wyandotte Pullet—First (A-5278-T), A. L. Anderson; second (45), F. F. & V. G. Warner; third (A-5257-T), A. L. Anderson.

Golden Wyandotte Cock—First (1183), Julius Sinn; second (1179), Julius Sinn; third (98), A. L. Anderson.

Golden Wyandotte Cockerel—First (30), A. L. Anderson; second (1123), Julius Sinn; third (1122), Julius Sinn.

Golden Wyandotte Hen—First (96), A. L. Anderson; second (97), A. L. Anderson; third (1146), Julius Sinn.

Golden Wyandotte Pullet—First (35), A. L. Anderson; second (39), A. L. Anderson; third (1135), Julius Sinn.

White Wyandotte Cock—First (0771-E), Ernest Massey; second (0786-E), Ernest Massey; third (64), Mrs. N. B. Asby.

White Wyandotte Cockerel—First (1), Dr. L. D. Carpenter; second (2), Dr. L. D. Carpenter; third (63), Mrs. N. B. Ashby.

White Wyandotte Hen—First (197), Mrs. N. B. Ashby; second (92), Frank Harris.

White Wyandotte Pullet—First (73), Mrs. N. B. Ashby; second (20), Dr. L. D. Carpenter; third (15), Dr. L. D. Carpenter.

Buff Wyandotte Cock—First (76), R. B. Rowe; second (79), R. B. Rowe; third (1168), F. F. & V. G. Warner.

Buff Wyandotte Cockerel—First (5665), J. D. Reid; second (12), R. B. Rowe; third (11), R. B. Rowe.

Buff Wyandotte Hen—First (91), R. B. Rowe; second (89), R. B. Rowe; third (1020), F. F. & V. G. Warner.

Buff Wyandotte Pullet—First (5630), J. D. Reid; second (13), R. B. Rowe; third (14), R. B. Rowe.

Partridge Wyandotte Cock—First (45), R. S. Jackson; second (50), R. S. Jackson; third (130), F. F. & V. G. Warner.

Partridge Wyandotte Cockerel—First (147), F. F. & V. G. Warner; second (56), A. L. Moore; third (53), A. L. Moore.

Partridge Wyandotte Hen—First (34), R. S. Jackson; second (41), R. S. Jackson; third (8), Thos. L. Morlan.

Partridge Wyandotte Pullet—First (50), A. L. Moore; second (52), A. L. Moore; third (143), F. F. & V. G. Warner.

Silver Penciled Wyandotte Cock—First, Manson Poultry Farm; second (1158), F. F. & V. G. Warner; third, Hanson Poultry Farm.

Silver Penciled Wyandotte Hen—First (21), Hanson Poultry Farm; second, Hanson Poultry Farm; third (34) F. F. & V. G. Warner.

Silver Penciled Wyandotte Pullet—First (149), F. F. & V. G. Warner; second (150) F. F. & V. G. Warner; third, Hanson's Poultry Farm.

Columbian Wyandotte Cock—First (208), Mrs. W. B. Beatty; second (5), Mrs. A. M. Walrath; third (89), C. A. Barquist.

Columbian Wyandotte Cockerel—First (8), Mrs. A. M. Walrath; second (6), Mrs. A. M. Walrath; third (913), Mrs. W. D. Beatty.

Columbian Wyandotte Hen—First (913), Mrs. W. D. Beatty; second (20), C. A. Barquist; third (94), C. A. Barquist.

Columbian Wyandotte Pullet—First (93), C. A. Barquist; second (88), C. A. Barquist.

Single Comb Rhode Island Red Cock—First (174), A. & J. W. Boyt; second (173), A. & J. W. Boyt; third, F. L. Reinhard & Son.

Single Comb Rhode Island Red Cockerel—First (1161), Howard Shane; second (5), J. M. Brown; third (138), A. & J. W. Boyt.

Single Comb Rhode Island Red Hen—First (6), J. C. Ash; second (3), Elliott Purmort; third (232), A. & J. W. Boyt.

Single Comb Rhode Island Red Pullet—First, F. L, Reinhard & Son; second (15), L. Bartlett; third (4), Elliott Purmort.

Rose Comb Rhode Island Red Cock—First (15), W. C. Hengen; second (5), I. E. Hubler & Son; third (133), A. B. Jordan.

Rose Comb Rhode Island Red Cockerel—First (9), W. C. Hengen; second (40), I. E. Hubler & Son; third (317), Carl Koenigsberger.

Rose Comb Rhode Island Red Hen—First (93), W. C. Hengen; second (41), I. E. Hubler & Son; third (43), Mrs. O. C. Bierma.

Rose Comb Rhode Island Red Pullet—First (318), Carl Koenigsberger; second (42), I. E. Hubler & Son; third (25), C. W. Howell.

Barred Plymouth Rock Exhibition Pen—Fowls Cockerel Bred—First (23839-26-27-28-29), Wm. Winnike; second, F. L. Reinhard & Son.

Barred Plymouth Rock Exhibition Pen—Chicks Cockerel Bred—First (20-15-16-17-18), Wm. Winnike; second (32-33-34-35-36), J. F. Harsh.

Barred Plymouth Rock Exhibition Pen—Fowls Pullet Bred—First (30-31-32-33-23837), Wm. Winnike; second (24-92-10-80-76), J. L. Todd.

Barred Plymouth Rock Exhibition Pen—Chicks Pullet Bred—First (21-22-23-24-25), Wm. Winnike; second (37-38-39-40-41), J. F. Harsh; third (16-19-20-18-11), Mrs. H. I. Branson.

Buff Plymouth Rock—Exhibition Pen—Fowls—First (181-654-632-634-649), Joe F. Denburger.

Buff Plymouth Rock Exhibition Pen—Chicks—First (11-12-13-14-15), Wm. J. Lockhart; second (16-17-18-19-20), Wm. J. Lockhart.

Partridge Plymouth Rock Exhibition Pen—Fowls—First (171-172-173-174-175, L. J. Schuster; second (99-310-378-389-374), C. W. Reeder; third (14-12-21-17-9), Taylor Bros.

Partridge Plymouth Rock Exhibition Pen—Chicks—First (12-14-15-16-20), A. E. Edwards; second (176-177-178-179-180), L. J. Schuster; third, (7724-8401-0299-0298-6), Taylor Bros.

Silver Wyandotte Exhibition Pen—Fowls—First (891-108-109-679-1607), F. F. & V. G. Warner; second (873-111-110-112-107), F. F. & V. G. Warner; third (100-87-78-85-99), A. L. Anderson.

Silver Wyandotte Exhibition Pen—Chicks—First (305-335-356-398-50), Trio Poultry Farm; second (85-172-157-173-151), F. F. & V. G. Warner; third (31-88-45-81-46), A. L. Anderson.

Golden Wyandotte Exhibition Pen—Fowls—First (1169-1129-1124-286-1113), F. F. & V. G. Warner; second (84-91-79-86-95), A. L. Anderson; third (1106-1143-1164-1160-1132), Julius Sinn.

Golden Wyandotte Exhibition Pen—Chicks—First (47-33-29-43-32), A. L. Anderson; second (1111-1115-1132-1138-1156), Julius Sinn; third (135-129-127-128-126), F. F. & V. G. Warner.

White Wyandotte Exhibition Pen—Fowls—First (45-81-37-60-3), F. G. Paul; second (183-180-181-182-184), Mrs. N. B. Ashby.

White Wyandotte Exhibition Pen—Chicks—First (4-7-8-25-19), Dr. L. D. Carpenter; second (53-50-54-57-55), Mrs. N. B. Ashby; third (99-91-93-95-49), Frank Harris.

Buff Wyandotte Exhibition Pen—Fowls—First (96-99-100-92-97), R. B. Rowe; second (266-1016-1117-1048-988), F. F. & V. G. Warner.

Buff Wyandotte Exhibition Pen—Chicks—First (21-22-23-24-9), R. B. Rowe; second, J. B. Reid; third (76-88-79-46-50), F. F. & V. G. Warner.

Partridge Wyandotte Exhibition Pen—Fowls—First (5-11-16-19-69), R. S. Jackson; second (138-137-130-139-134), F. F. & V. G. Warner; third (21-9-96-78-20), Thos. L. Morlan.

Partridge Wyandotte Exhibition Pen—Chicks—First (141-142-143-144-140), F. F. & V. G. Warner; second (2-3-5-12-15), Thos. L. Morlan.

Single Comb Rhode Island Red Exhibiton Pen—Fowls—First (1-2-3-4-5), J. A. Ash; second (63-117-121-225-252), Frank Chalupa; third, F. L. Reinhard & Son.

Single Comb Rhode Island Red Exhibition Pen—Chicks—First (19-23-16-12-63), L. Bartlett; second (18-26-96-110-211), Frank Chalupa; third, F. L. Reinhard & Son.

Rose Comb Rhode Island Red Exhibition Pen—Fowls—First (6-43-44-45-46), I. E. Hubler & Son; second (88-89-94-95-96), W. C. Hengen.

Rose Comb Rhode Island Red Exhibition Pen—Chicks—First (71-72-73-74-70), I. E. Hubler & Son; second (20-21-22-23-319), Carl Koenigsberger; third (84-85-86-87-91), W. G. Hengen.

SPECIALS OFFERED BY INTERSTATE PUBLISHING COMPANY OF DES MOINES.

Best Cockerel in Show, All Breeds Competing—K. L. Price.

SWEEPSTAKES.

Best Pullet—American Class—Mrs. N. B. Ashby.

Best Cockerel—American Class—J. M. Brown.

ASIATIC.

EXHIBITORS.

Verne E. Argo, Tipton, Iowa; Jesse Alexander, Altoona, Iowa; Matt Baker, Mitchellville, Iowa; Arthur Dearinger, Reasnor, Iowa; Fairholme Poultry Farm, Boone, Iowa; Hansons Poultry Farm, Dean, Iowa; Weir Hart, Bondurant, Iowa; Frank Johnson, Monroe, Iowa; J. M. Knott, Orland, Illinois; R. A. Lundberg, Altoona, Iowa; Beryl Parks, Des Moines, Iowa; F. L. Reinhard & Son, Ottumwa, Iowa; R. E. West, Altoona, Iowa; Logan Earl Wing, St. Joseph, Missouri.

AWARDS.

JUDGE........................W. S. RUSSELL, Ottumwa, Iowa.

Light Brahma Cock—First (90), Fairholme Poultry Yards; second (53), R. E. West; third (87), Weir Hart.

Light Brahma Cockerel—First (93), Fairholme Poultry Yards; second (44), Frank Johnson; third (88), Weir Hart.

Light Brahma Hen—First (56), R. E. West; second (94), Weir Hart; third (17), Weir Hart.

Light Brahma Pullet—First (49), Frank Johnson; second (30), Weir Hart; third (92), Fairholme Poultry Yards.

Dark Brahma Cock—First, Hansons Poultry Farm.

Dark Brahma Hen—First, second and third, Hanson's Poultry Farm.

Buff Cochin Cock—First (37), R. E. West; second (49), John M. Knott; third (20), Weir Hart.

Buff Cochin Cockerel—First (25), Jesse Alexander & Co.

Buff Cochin Hen—First (5115), John M. Knott; second (62), R. E. West; third (22), Jesse Alexander & Co.

Buff Cochin Cockerel—First (23), Jesse Alexander & Co.

Partridge Cochin Cock—First (399), Beryl Parks; second (291), R. A. Lundberg; third (21), R. E. West.

Partridge Cochin Cockerel—First (389), Beryl Parks; second (398), Beryl Parks; third Hanson's Poultry Farm.

Partridge Cochin Hen—First (61), R. E. West; second, Hanson's Poultry Farm; third, Hanson's Poultry Farm.

Patridge Cochin Pullet—First, Hanson's Poultry Farm; second (300), R. A. Lundberg; third (298), R. A. Lundberg.

Black Langshan Cock—First (73), R. E. West; second, F. L. Reinhard & Son.

Black Langshan Cockerel—First (21), Logan Earl Wing; second (17), Logan Earl Wing; third (28), Arthur Dearinger.

Black Langshan Hen—First (78), R. E. West; second (5), Arthur Dearinger; third (29), Matt Baker.

Black Langshan Pullet—First (50), Logan Earl Wing; second (13), Logan Earl Wing; third (127), R. E. West.

White Langshan Cock—First, Hanson's Poultry Farm; second (62), Weir Hart; third (38), R. E. West.

White Langshan Cockerel—First (73), Weir Hart; second (77), Weir Hart; third (67), R. E. West.

White Langshan Hen—First (4), R. E. West; second, Hanson's Poultry Farm; third (1), R. E. West.

White Langshan Pullet—First (67), Weir Hart; second (61), Weir Hart; third (69), R. E. West.

Light Brahma Exhibition Pen—Fowls—First (45-29-22-31-41), Weir Hart; second (83-84-85-86-87), Fairholm Poultry Yards; third (3-50-51-52-53), Frank Johnson.

Light Brahma Exhibition Pen—Chicks—First (39-64-68-76-71), Weir Hart; second (54-55-56-57-58), Frank Johnson.

Buff Cochin Exhibition Pen—Fowls—First (67-33-50-74-26), R. E. West.

Buff Cochin Exhibition Pen—Chicks—First (46-35-88-54-59), R. E. West.

Partridge Cochin Exhibition Pen—Fowls—First (29-65-96-83-40), R. E. West.

Partridge Cochin Exhibition Pen—Chicks—First (384-387-391-393-395), Beryl Parks; second (96-86-71-97-78), R. E. West.

Black Langshan Exhibition Pen—Fowls—First (38-93-77-27-26), R. E. West; second (91-93-97-75-92), Matt Baker.

Black Langshan Exhibition Pen—Chicks—First (15-95-74-4-75), Arthur Dearinger; second (49-132-131-126-128), R. E. West.

SWEEPSTAKES.

Best Cockerel Asiatic Class—Logan Earl Wing.
Best Pullet Asiatic Class—Hanson's Poultry Farm.

MEDITERRANEAN.

EXHIBITORS.

D. E. Ackoss, Des Moines, Iowa; Jesse Alexander, Altoona, Iowa; Verne E. Argo, Tipton, Iowa; L. W. Bell, Des Moines, Iowa; J. E. Cundy, Milford, Iowa; Geo. B. Ferris, Grand Rapids, Michigan; Wm. Harvey, Des Moines, Iowa; Chas. E. Hines, Des Moines, Iowa; Hanson's Poultry Farm, Dean, Iowa; E. E. Lucas, Des Moines, Iowa; Ed. B. McPherrin, Des Moines, Iowa; P. W. Pitt, Belle Plaine, Iowa; J. M. Williamson, Des Moines, Iowa; W. F. Wallace, Diagonal, Iowa.

AWARDS.

JUDGES.............F. H. SHELLABARGER, West Liberty, Iowa.
W. S. RUSSELL, Ottumwa, Iowa.

Single Comb Brown Leghorn Cockerel—First, F. L. Reinhard & Son.

Single Comb Brown Leghorn Hen—First, F. L. Reinhard & Son.

Single Comb Brown Leghorn Pullet—First (47), P. W. Pitt; second (43), P. W. Pitt; third (60), Frank Johnson.

Rose Comb Brown Leghorn Cockerel—First (304), Jesse Alexander & Co; second (326), Jesse Alexander & Co.

Rose Comb Brown Leghorn Hen—First (19), Jesse Alexander & Co.; second (20), Jesse Alexander & Co.

Rose Comb Brown Leghorn Pullet—First (331), Jesse Alexander & Co.; second (317), Jesse Alexander & Co.; third (316), Jesse Alexander & Co.

Single Comb White Leghorn Cock—First (0563), George B. Ferris; second (0578), Geo. B. Ferris; third (201), J. M. Williamson.

Single Comb White Leghorn Cockerel—First (0582), Geo. B. Ferris; second (300), Wm. Harvey; third (26), W. F. Wallace.

Single Comb White Leghorn Hen—First (7212), Geo. B. Ferris; second, (206), J. M. Williamson; third (7235), Geo. B. Ferris.

Single Comb White Leghorn Pullet—First (207), J. M. Williamson; second (7236), Geo. B. Ferris; third (297), Wm. Harvey.

Rose Comb White Leghorn Cock—Second (15), Jesse Alexander & Co.

Rose Comb White Leghorn Cockerel—Second (16), Jesse Alexander & Co.

Rose Comb White Leghorn Hen—Second (18), Jesse Alexander & Co.

Rose Comb White Leghorn Pullet—First (6), Jesse Alexander & Co.; second (5), Jesse Alexander & Co.

Single Comb Buff Leghorn Cock—First (2), E. E. Lucas; second (1), E. E. Lucas; third (3), E. E. Lucas.

Single Comb Buff Leghorn Cockerel—First (12), E. E. Lucas; second (11), E. E. Lucas; third (10), E. E. Lucas.

Single Comb Buff Leghorn Hen—First (6), E. E. Lucas; second (4), E. E. Lucas; third (223), Hanson Poultry Farm.

Single Comb Buff Leghorn Pullet—First (9), E. E. Lucas; second (8), E. E. Lucas; third (100), Chas. E. Hines.

Single Comb Black Leghorn Hen—First (33), R. E. West.

Sicilian Buttercup Cock—First (1), L. W. Bell; second (2), L. W. Bell; third (3), L. W. Bell.

Sicilian Buttercup Hen—First (311), Ed. B. McPherrin; second (6), L. W. Bell; third (5), L. W. Bell.

Sicilian Buttercup Pullet—First (8), L. W. Bell; second (9), L. W. Bell; third (7), L. W. Bell.

Single Comb Black Minorca Cock—First (333), Jesse Alexander & Co.

Single Comb Black Minorca Cockerel—First (89), R. E. West.

Single Comb Black Minorca Hen—First (2), Jesse Alexander & Co.; second (335), Jesse Alexander & Co.

Rose Comb Black Minorca Cock—First (19), J. E. Cundy; second (20), J. E. Cundy.

Rose Comb Black Minorca Cockerel—First (38), Verne E. Argo.

Rose Comb Black Minorca Pullet—First (48), Verne E. Argo.

Single Comb White Minorca Cockerel—Second (22), R. E. West.

Single Comb White Minorca Pullet—Second (59), R. E. West.

White Faced Black Spanish Cock—First (37), R. E. West; second, F. L. Reinhard & Son.

White Faced Black Spanish Cockerel—First (75), R. E. West; second (84), R. E. West.

White Faced Black Spanish Hen—First, R. L. Reinhard & Son; second (46), R. E. West.

White Faced Black Spanish Pullet—First (40), R. E. West; second (95), R. E. West.

Blue Andalusian Cock—First (32), R. E. West; second, Hanson Poultry Farm.

Blue Andalusian Cockerel—First (41), R. E. West.

Blue Andalusian Hen—First (84), R. E. West; second, Hanson Poultry Farm.

Mottled Ancona Cock—First, Hanson's Poultry Farm.

Mottled Ancona Cockerel—First (85), R. E. West; second, Hanson's Poultry Farm; third (422), Hanson's Poultry Farm.

Mottled Ancona Hen—Second (98), Hanson's Poultry Farm.

Mottled Ancona Pullet—First (35), R. E. West; second, Hanson's Poultry Farm; third, Hanson's Poultry Farm.

Single Comb White Leghorn Exhibition Pen—Fowls—First (210-209-211-212-213), J. M. Williamson; second (0572-7216-7233-7206-7242), Geo. B. Ferris.

Single Comb White Leghorn Exhibition Pen—Chicks—First (214-215-216-217-218), J. M. Williamson; second (219-220-221-222-223), J. M. Williamson; third (0576-7240-7223-7041-7220), Geo. B. Ferris.

Rose Comb White Leghorn Exhibition Pen—Chicks—Second (84-92-33-376-399), Jesse Alexander & Co.

Single Comb Buff Leghorn Exhibition Pen—Chicks—First (23-24-25-26-27), E. E. Lucas; second (18-19-20-21-22), E. E. Lucas.

SWEEPSTAKES.

Best Pullet Mediterranean Class—J. M. Williamson.

Best Cockerel Mediterranean Class—Geo. B. Ferris.

ENGLISH.

EXHIBITORS.

E. J. Butterfield, Dallas Center, Iowa; Roy Bulechek, Hills, Iowa; August Beck, Granger, Iowa; Mrs. C. E. Coleman, Clarinda, Iowa; Fairholm Poultry Yards, Boone, Iowa; P. A. Fosselman, Waverly, Iowa; N. W. Falk, Oelwein, Iowa; A. E. Goodman, Indianola, Iowa; G. R. Gilbert, Prairie City, Iowa; Mrs. R. M. Good, Chariton, Iowa; Hanson's Poultry Farm, Dean, Iowa; Iowana Farms, Davenport, Iowa; H. E. Killmer, Rock Island, Illinois; Jos. Morgan, Olds, Iowa; Gust Nesland, Davenport, Iowa; K. L. Price, Missouri Valley, Iowa; Luther R. Pike, Missouri Valley, Iowa; Jno. R. Patterson, Boone, Iowa; C. W. Reeder, Leon, Iowa; J. S. Wright, Rockwell City, Iowa.

AWARDS.

JUDGES..............W. S. RUSSELL, Ottumwa, Iowa.
F. H. SHELLABARGER, West Liberty, Iowa.

Rose Comb Red Cap Cock—First and second, Hanson's Poultry Farm.

Rose Comb Red Cap Cockerel—First and second, Hanson's Poultry Farm.

Rose Comb Red Cap Hen—First and second, Hanson's Poultry Farm.

Rose Comb Red Cap Pullet—First and second, Hanson's Poultry Farm.

Single Comb Buff Orpington Cock—First (A5153d), H. E. Killmer; second (33), J. S. Wright; third (8315d), H. E. Killmer.

Single Comb Buff Orpington Cockerel—First (55), H. E. Killmer; second (56), H. E. Killmer; third (40), J. S. Wright.

Single Comb Buff Orpington Hen—First (171), J. S. Wright; second (342), N. W. Falk; third (79), Luther R. Pike.

Single Comb Buff Orpington Pullet—First (299), Gust Nesland; second (20), J. S. Wright; third (30), J. S. Wright.

Single Comb Black Orpington Cock—First (176), C. W. Reeder; second (301), C. W. Reeder; third (211), E. J. Butterfield.

Single Comb Black Orpington Cockerel—First (53), E. J. Butterfield; second (183), C. W. Reeder; third (29), C. W. Reeder.

Single Comb Black Orpington Hen—First (185), C. W. Reeder; second, (28703), Kolburn Hegna; third (181), C. W. Reeder.

Single Comb Black Orpington Pullet—First (56), E. J. Butterfield; second (161), C. W. Reeder; third (157), C. W. Reeder.

Single Comb White Orpington Cock—First (804), Iowana Farms; second (80), A. E. Goodman; third (195), K. L. Price.

Single Comb White Orpington Cockerel—First (199), K. L. Price; second (810), Iowana Farms; third (812), Iowana Farms.

Single Comb White Orpington Hen—First (873), Iowana Farms; second (872), Iowana Farms; third (9278), P. A. Fosselmann.

Single Comb White Orpington Pullet—First (289), K. L. Price; second (290), K. L. Price; third (881), Iowana Farms.

Single Comb White Orpington Exhibition Pen—Chicks—First (803-861-862-863-864), Iowana Farms; second (200-296-297-298-299), K. L. Price; third (194-291-292-293-294), K. L. Price.

Single Comb White Orpington Exhibition Pen—Fowls—First (802-852-853-854-855), Iowana Farms; second (98-153-156-194-9286), P. A. Fosselman; third (43-44-47-48-50), Mrs. R. M. Good.

Single Comb Black Orpington Exhibition Pen—Chicks—First (199-151-158-177-159), C. W. Reeder; second (1-2-3-4-5), August Beck; third (131-129-132-187-188), C. W. Reeder.

Single Comb Black Orpington Exhibition Pen—Fowls—First (196-179-178-198-182), C. W. Reeder; second (162-164-171-184-180), C. W. Reeder; third (352-394-340-341-36), C. W. Reeder.

Single Comb Buff Orpington Exhibition Pen Chicks—First (293-299-297-296-298), Gus Nesland; second (22-29-23-44-48), J. S. Wright; third (253-255-260-261-262), Luther R. Pike.

Single Comb Buff Orpington Exhibition Pen—Fowls—First (48-36-47-64-176), J. S. Wright.

SWEEPSTAKES.

Best Cockerel English Class—K. L. Price.
Best Pullet English Class—K. L. Price.

POLISH.

EXHIBITORS.

Jesse Alexander, Altoona, Iowa; Hanson's Poultry Farm, Dean, Iowa; R. E. West, Altoona, Iowa.

AWARDS.

JUDGE......................W. S. RUSSELL, Ottumwa, Iowa.

White Crested Black Polish Cock—First (343), Jesse Alexander & Co.; second (49), R. E. West; third, Hanson's Poultry Farm.

White Crested Black Polish Cockerel—First (48), Jesse Alexander; second (32), R. E. West.

White Crested Black Polish Hen—First (50), Jesse Alexander & Co.; second, Hanson's Poultry Farm; third, Hanson's Poultry Farm.

White Crested Black Polish Pullet—First (341), Jesse Alexander & Co.; second (33), R. E. West.

Non Bearded Golden Polish Cock—First, Hanson's Poultry Farm.

Non Bearded Golden Polish Hen—First and second, Hanson's Poultry Farm.

DUTCH.

EXHIBITORS.

Jesse Alexander, Altoona, Iowa; Hanson's Poultry Farm, Dean, Iowa; R. E. West, Altoona, Iowa.

AWARDS.

JUDGE............F. H. SHELLABARGER, West Liberty, Iowa.

Silver Spangled Hamburg Cockerel—First (346), Jesse Alexander & Co.

Silver Spangled Hamburg Hen—First (9), F. L. Reinhard & Son; second (99), F. L. Reinhard & Son; third (70), Jesse Alexander & Co.

Mottled Houdan Cock—First (77), R. E. West; second, Hanson's Poultry Farm.

Mottled Houdan Cockerel—First (35), R. E. West.

Mottled Houdan Hen—First (36), F. P. Heffelfinger; second (42), F. L. Reinhard & Son; third (220), Hanson's Poultry Farm.

Mottled Houdan Pullet—First (21), R. E. West.

GAME AND GAME BANTAMS.

EXHIBITOR.

Hanson's Poultry Farm, Dean, Iowa.

AWARDS.

JUDGE......................W. S. RUSSELL, Ottumwa, Iowa.

Red Pyle Game Cock—First and second, Hanson's Poultry Farm.

Red Pyle Game Cockerel—First and second, Hanson's Poultry Farm.

Red Pyle Game Hen—First and second, Hanson's Poultry Farm.

Red Pyle Game Pullet—First and second, Hanson's Poultry Farm.

Red Pyle Game Bantam Cock—First, Hanson's Poultry Farm.

Red Pyle Game Bantam Cockerel—First and second, Hanson's Poultry Farm.

Red Pyle Game Bantam Hen—First, Hanson's Poultry Farm.

Red Pyle Game Bantam Pullet—First and second, Hanson's Poultry Farm.

White Game Bantam Pullet—First and second, Hanson's Poultry Farm.

ORIENTAL GAMES AND BANTAMS.

EXHIBITORS.

Jesse Alexander & Co., Altoona, Iowa; Dr. R. B. Munn, Hampshire, Illinois; F. L. Reinhard & Son, Ottumwa, Iowa; Hanson's Poultry Farm, Dean, Iowa.

AWARDS.

JUDGE....................W. S. RUSSELL, Ottumwa, Iowa.

Cornish Indian Cock—First (450), Dr. R. B. Munn; second (447), Dr. R. B. Munn; third (447), Dr. R. B. Munn.

Cornish Indian Cockerel—First (438), Dr. R. B. Munn; second (439), Dr. R. B. Munn; third, F. L. Reinhard & Son.

Cornish Indian Hen—First (334), Dr. R. B. Munn; second (335), Dr. R. B. Munn; third, F. L. Reinhard & Son.

Cornish Indian Pullet—First (358), Dr. R. B. Munn; second, F. L. Reinhard & Son; third (359), Dr. R. B. Munn.

White Indian Cock—First, Hanson's Poultry Farm.

White Indian Hen—First and second, Hanson's Poultry Farm.

White Indian Pullet—First, Hanson's Poultry Farm.

Black Breasted Red Malay Hen—First and second, Hanson's Poultry Farm.

ORNAMENTAL GAMES AND BANTAMS.

EXHIBITORS.

Jesse Alexander & Co., Altoona, Iowa; Verne Argo, Tipton, Iowa; Hanson's Poultry Farm, Dean, Iowa; A. H. Mether, Waterloo, Iowa; F. L. Reinhard & Son, Ottumwa, Iowa; R. E. West, Altoona, Iowa.

AWARDS.

JUDGE......................W. S. RUSSELL, Ottumwa, Iowa.

Golden Seabright Cock—First (74) and second (61), Jesse Alexander & Co.

Golden Seabright Hen—First (85) and second (69), Jesse Alexander & Co.

Golden Seabright Pullet—First (38), Jesse Alexander.

White Booted Hen—First, F. L. Reinhard & Son.

Light Brahma Cock—First and second, Hanson's Poultry Farm.

Light Brahma Hen—First, Hanson's Poultry Farm.

Buff Cochin Cock—First (1), Jesse Alexander & Co.; second (28), Verne E. Argo; third (37), L. M. Collins.

Buff Cochin Cockerel—First (2), Jesse Alexander & Co.; second (47), L. M. Collins; third (5), L. M. Collins.

Buff Cochin Hen—First (80), R. E. West; second, F. L. Reinhard & Son; third (64), Verne E. Argo.

Buff Cochin Pullet—First (7), Jesse Alexander & Co.; second (6), Jesse Alexander & Co.; third (4), L. M. Collins.

Partridge Cochin Cock—First (14), R. E. West.

White Cochin Cock—First (60), R. E. West; second (8), Jesse Alexander & Co.

White Cochin Cockerel—First (76), R. E. West; second (6), Weir Hart.

White Cochin Hen—First (41), Weir Hart; second (10), Jesse Alexander & Co.; third (95), R. E. West.

White Cochin Pullet—First (99), R. E. West; second (38), Weir Hart.

Black Cochin Cock—First (61), R. E. West; second (12), Jesse Alexander & Co.; third (11), Jesse Alexander & Co.

Black Cochin Hen—First (14), Jesse Alexander & Co.; second (13), Jesse Alexander & Co.; third (73), R. E. West.

Black Cochin Pullet—First and second, Hanson's Poultry Farm.

Black Tailed Japanese Hen—First, Hanson's Poultry Farm.

White Japanese Hen—First, Hanson's Poultry Farm.

MISCELLANEOUS.

EXHIBITORS.

Verne Argo, Tipton, Iowa; E. B. Benson, Latimer, Iowa; Ralph W. Cram, Davenport, Iowa; P. A. Fosselman, Waverly, Iowa; Mrs. Lafe Owens, Des Moines, Iowa; C. & C. T. Van Lint, Pella, Iowa; Wm. Walker, Des Moines, Iowa.

AWARDS.

JUDGE......................W. S. RUSSELL, Ottumwa, Iowa.

White Silkie Cock—First, Hanson's Poultry Farm; second (47), Verne E. Argo.

White Silkie Hen—First (51), Verne E. Argo; second and third, Hanson's Poultry Farm.

Any Color Frizzle Cock—First, Hanson's Poultry Farm.

Any Color Frizzle Hen—First and second, Hanson's Poultry Farm.

Silver Campine Cock—First (3), E. B. Benson; second (46), Ralph W. Cram; third (1), E. B. Benson.

Silver Campine Cockerel—First (121), Ralph W. Cram; second (31476), C. & C. T. Van Lint; third (11), E. B. Benson.

Silver Campine Hen—First (6), E. B. Benson; second (122), Ralph W. Cram; third (4), E. B. Benson.

Silver Campine Pullet—First (103), Ralph W. Cram; second (7), E. B. Benson; third (8), E. B. Benson.

Silver Campine Exhibition Pen—Fowls—First (13-14-15-16-17), E. B. Benson.

Silver Campine Exhibition Pen—Chicks—First (18-19-20-21-22), E. B. Benson; second (38-39-40-41-42), Wm. Walker.

Blue S. C. Orpington Cock—First (5017C), P. A. Fosselmann.

Blue S. C. Orpington Pullet—First (5598a), P. A. Fosselman.

CAPONS.

EXHIBITOR.

Hanson's Poultry Farm, Dean, Iowa.

AWARDS.

JUDGE......................W. S. RUSSELL, Ottumwa, Iowa.

Any Variety Capon—First and second, Hanson's Poultry Farm.

PIGEONS.

EXHIBITORS.

Wib. F. Clements, Agency, Iowa; F. L. Douglas, Des Moines, Iowa; Frank Fortman, Dyersville, Iowa; Mrs. Frank Harris, Des Moines, Iowa; F. L. Reinhard & Son, Ottumwa, Iowa.

AWARDS.

JUDGE......................W. S. RUSSELL, Ottumwa, Iowa.

Pair Homing Pigeons—First (1), Mrs. Frank Harris; second (9), Mrs. Frank Harris; third (31-32), F. L. Douglas.

Pair Fantail Pigeons—First, R. E. West.

Pair Pouter Pigeons—First, second and third, Frank Fortman.

Pair Swallow Pigeons—First, second and third, Wib. F. Clements.

Pair Tumbler Pigeons—First, F. L. Reinhard & Son.

Pair Turbet Pigeons—First, F. L. Reinhard & Son.

TURKEYS.

EXHIBITORS.

Mrs. O. C. Bierma, Altoona, Iowa; Mrs. R. H. Longworth, Polk City, Iowa; F. F. & V. G. Warner, Bloomfield, Iowa.

AWARDS.

JUDGE......................W. S. RUSSELL, Ottumwa, Iowa.

Bronze Turkey Cock—First (1243), F. F. & V. G. Warner; second (50), Mrs. O. C. Bierma.

Bronze Turkey Cockerel—First (1218), F. F. & V. G. Warner.

Bronze Turkey Hen—First (1207), F. F. & V. G. Warner; second (47), Mrs. O. C. Bierma.

Bronze Turkey Pullet—First (1205), F. F. & V. G. Warner.

White Holland Turkey Cock—First (11), Mrs. R. H. Longworth.

White Holland Turkey Cockerel—First (12), Mrs. R. H. Longworth.

White Holland Turkey Hen—First (14), Mrs. R. H. Longworth.

White Holland Turkey Pullet—First (16), Mrs. R. H. Longworth.

DUCKS.

EXHIBITORS.

D. E. Ackoss, Des Moines, Iowa; Verne E. Argo, Tipton, Iowa; Mrs. Robt. Carlile, Valley Junction, Iowa; Hanson's Poultry Farm, Dean, Iowa; O'Donnell Poultry Farm, Valley Junction, Iowa; R. E. West, Altoona, Iowa; C. & C. T. Van Lint, Pella, Iowa; F. F. & V. G. Warner, Bloomfield, Iowa.

AWARDS.

JUDGE..............F. H. SHELLABARGER, West Liberty, Iowa.

White Pekin Drake, Old—First (9), R. E. West; second (1061), F. F. & V. G. Warner; third (350), D. E. Ackoss.

White Pekin Drake, Young—First (41), R. E. West; second (145), F. F. & V. G. Warner; third (5), Verne E. Argo.

White Pekin Duck, Old—First (1189), F. F. & V. G. Warner; second (1), R. E. West; third (147), O'Donnell Poultry Farm.

White Pekin Duck, Young—First (23), R. E. West; second (49), Verne E. Argo; third (146), F. F. & V. G. Warner.

Colored Rouen Drake, Old—First (21), C. & C. T. Van Lint; second (20), C. & C. T. Van Lint; third, Hanson's Poultry Farm.

Colored Rouen Drake, Young—First and second, Hanson's Poultry Farm.

Colored Rouen Duck, Old—First (31492), C. & C. T. Van Lint; second (31493), C. & C. T. Van Lint; third, Hanson's Poultry Farm.

Colored Rouen Duck, Young—First and third, Hanson's Poultry Farm; second (4), R. E. West.

Black Cayuga Drake, Old—First (4), R. E. West; second, Hanson's Poultry Farm.

Black Cayuga Duck, Old—First (10), R. E. West; second, Hanson's Poultry Farm.

Gray Call Drake, Old—First and second, Hanson's Poultry Farm.

Gray Call Duck, Old—First, Hanson's Poultry Farm.

Colored Muscovy Drake, Old—First and third, Hanson's Poultry Farm; second (29), R. E. West.

Colored Muscovy Drake, Young—First, R. E. West.

Colored Muscovy Duck, Old—First, R. E. West; second, Hanson's Poultry Farm.

Colored Muscovy Duck, Young—First (79), R. E. West.

White Muscovy Drake, Old—First and second, Hanson's Poultry Farm; third (65), R. E. West.

White Muscovy Duck, Old—First, Hanson's Poultry Farm; second (8), R. E. West.

Fawn and White Indian Runner Drake, Old—First, F. L. Reinhard & Son; second (656) and third (658), Mrs. Lafe Owens.

Fawn and White Indian Runner Drake, Young—First and third, F. L. Reinhard & Son; second, Hanson's Poultry Farm.

Fawn and White Indian Runner Duck, Old—First (663), Mrs. Lafe Owens; second and third, F. L. Reinhard & Son.

Fawn and White Indian Runner Duck, Young—First, F. L. Reinhard & Son; second and third, Hanson's Poultry Farm.

White Indian Runner Drake, Old—First and second, F. L. Reinhard & Son; third, Mrs. Robt. Carlile.

White Indian Runner Drake, Young—First (92), Mrs. Robt. Carlile; second and third, F. L. Reinhard & Son.

White Indian Runner Duck, Old—First, second and third, F. L. Reinhard & Son.

White Indian Runner Duck, Young—First and second, F. L. Reinhard & Son; third (94), Mrs. Robt Carlile.

GEESE.

EXHIBITORS.

Hanson's Poultry Farm, Dean, Iowa; O'Donnell Poultry Farm, Valley Junction, Iowa; Lillie Taylor, Highland Park, Des Moines, Iowa; C. & C. T. Van Lint, Pella, Iowa; F. L. Reinhard & Son, Ottumwa, Iowa; R. E. West, Altoona, Iowa.

AWARDS.

JUDGE........................W. S. RUSSELL, Ottumwa, Iowa.

Gray Toulouse Gander, Old—First (53), Lillie Taylor; second (30), R. E. West.

Gray Toulouse Gander, Young—First (68), R. E. West.

Gray Toulouse Goose, Old—First (66), Lillie Taylor; second (59), R. E. West.

Gray Toulouse Goose, Young—First, F. L. Reinhard & Son; second (35), R. E. West.

White Embden Gander, Old—First (2), R. E. West.

White Embden Gander, Young—First, F. L. Reinhard & Son.

White Embden Goose, Old—First, F. L. Reinhard & Son; second (19), R. E. West.

White Embden Goose, Young—First (51), R. E. West.

Gray African Gander, Old—First (133), R. E. West; second (95), R. E. West.

Gray African Gander, Young—First (65), and second (69), R. E. West; third, Hanson's Poultry Farm.

Gray African Goose, Old—First, Hanson's Poultry Farm.

Gray African Goose, Young—First (60), R. E. West; second, Hanson's Poultry Farm.

Brown Chinese Gander, Old—First (63), R. E. West.

Brown Chinese Gander, Young—First (90), R. E. West.

Brown Chinese Goose, Old—First (66), R. E. West.

Brown Chinese Goose, Young—First (12), R. E. West.

White Chinese Gander, Old—First and third, Hanson's Poultry Farm; second (70), R. E. West.

White Chinese Gander, Young—First, Hanson's Poultry Farm; second and third, F. L. Reinhard & Son.

White Chinese Goose, Old—First (68), R. E. West; second, F. L. Reinhard & Son; third (236), O'Donnell Poultry Farm.

White Chinese Goose, Young—First and second, F. L. Reinhard & Son.

EGG LAYING CONTEST.

EXHIBITORS.

E. B. Benson, Latimer, Iowa; Geo. B. Ferris, Grand Rapids, Michigan; P. A. Fosselman, Waverly, Iowa; W. Harvey, Des Moines, Iowa; J. C. Sandmier, Waukee, Iowa; F. F. & V. G. Warner, Bloomfield, Iowa; J. M. Williamson, Des Moines, Iowa.

AWARDS.

Egg Laying Contest—First, W. Harvey; second, W. Harvey; third, J. C. Sandmier; fourth, E. B. Benson.

COMMERCIAL EGGS—AMERICAN CLASS.

EXHIBITORS.

Wib. F. Clements, Agency, Iowa; F. L. Reinhard & Son, Ottumwa, Iowa; C. W. Reeder, Leon, Iowa.

AWARDS.

JUDGE............................F. E. MIXA, Ames, Iowa.

Commercial Eggs—First, F. L. Reinhard & Son; second, C. W. Reeder.

MEDITERRANEAN CLASS.

EXHIBITORS.

J. E. Cundy, Milford, Iowa; Hanson's Poultry Farm, Dean, Iowa; F. L. Reinhard & Son, Ottumwa, Iowa; J. M. Williamson, Des Moines, Iowa; Wm. Walker, Des Moines, Iowa.

Commercial Eggs—First, J. M. Williamson; second, Wm. Walker; third, J. E. Cundy.

ASIATIC CLASS.

EXHIBITORS.

Weir Hart, Bondurant, Iowa; F. L. Reinhard & Son, Ottumwa, Iowa.

Commercial Eggs—First, Weir Hart; second, F. L. Reinhard & Son.

ENGLISH CLASS.

EXHIBITORS.

C. W. Reeder, Leon, Iowa; F. L. Reinhard & Son, Ottumwa, Iowa.

Commercial Eggs—First, C. W. Reeder; second, F. L. Reinhard & Son.

Best Dozen Eggs, All Varieties Competing—J. M. Williamson, Des Moines, Iowa.

PART V.

Proceedings of the Annual Meeting of the Iowa Swine Breeders' Association, 1913.

The annual meeting of the Iowa Swine Breeders' Association was held at Ames, Iowa, June 18, 1913. In the absence of the president and first vice-president, the second vice-president, F. J. Sexsmith of Orient presided. It is not possible in this report to give all of the addresses in full, inasmuch as no shorthand report of the meeting was taken and a number of addresses were informal.

The Association was welcomed by Charles F. Curtiss, Dean of the Agricultural Department of the Iowa State College of Agriculture and Mechanic Arts. He assured the members of the organization that no Association was more welcome at the college than the Swine Breeders. He stated it to be his belief that they came together as students and that they were able to obtain highly valuable information from their meetings. The modern type of improved swine, he stated, represented the highest efficiency in the attainments of the business of animal industry. No other animal converts grains into high priced meats so readily or with so great a profit as the hog. He said that although this state had just disposed of the greatest corn crop ever raised and at low prices, the hog netted $1.00 per bushel for every bushel fed him.

Mr. Sexsmith as chairman responded briefly to this address of welcome. He said that Iowa Swine Breeders were always glad to visit Ames and they never failed to go home with a great deal of information regarding their business that they could not secure from other sources.

John M. Evvard of the Animal Husbandry Section, Iowa Eperiment Station, gave the following paper on the subject, "Forage Crops for Swine."

FORAGE CROPS FOR IOWA SWINE.

JOHN M. EVVARD.

Hog growing and fattening in the middle west economically centers around corn.

Our chief problem is to advantageously dispose of our corn; this is done by intelligently supplementing said corn with foods which are efficiently grown or purchased, and which supply the deficiencies of the corn itself.

Indian Corn is our greatest American swine grain; it is not a complete ration, being deficient in a few particulars:

First,—Low in protein. The remedy of course is to supply this material.

Second,—The quality of the corn protein is somewhat inferior. Osborne* and Mendel have shown us that zein which comprises practically 58 per cent of the corn proteins, lacks three protein building stones, namely tryptophane, lysine and glycocoll. Unfortunately for corn tryptophane is necessary for normal growth and development; fortunately for corn, however, the other 42 per cent of the protein is of seemingly good quality. It is common sense to assume that meat proteins are more efficient pound for pound than vegetable proteins, because having already been built up into animal tissues they are more likely to furnish the initial amino acids or building stones; in practice meat and milk proteins give best physiological results.

Third,—Deficiency of minerals. Calcium especially is markedly conspicuous because of its almost entire absence. The significance of calcium is apparent when we realize that it comprises practically 40 per cent of the dry ash of bone. Phosphorus, the bone-forming mate of calcium, is of much importance, furnishing as it does 17 per cent or thereabouts of the material which makes up the dry material of bone ash, and yet corn does not supply enough phosphorus to meet normal requirements of growing swine.

Fourth,—It shows an acid ash. There is in corn a preponderance of such elements as sulphur, phosphorus and chlorine, as compared to calcium, potassium, sodium and magnesium; this comparison being made with normal solutions made up from the different elements.

Corn is somewhat constipating in character and does not have as much fat possibly as the animal can use to advantage; hence these difficuties need to be overcome.

Feeds that economically supply the deficiences of corn are the ones advantageously used in the growing and fattening of swine in the Corn Belt.

*Monthly Journal of Biological Chemistry Vol. XIV, No. 2, March, 1913. Science, Vol. XXXVII, No. 944, January 31, 1913.

FORAGE CROPS ARE INDISPENSABLE.

The imperative economic need of green pastures and forages in successful pork production is emphasized by some six years' investigation involving more than five thousand hogs at the Iowa Experiment Station.

In selecting a forage for our conditions, a forage that is suitable to the

Corn Belt comprising those great states of Iowa, Illinois, Nebraska, Missouri, Indiana, Wisconsin, Minnesota, Michigan and adjoining portions of others, we must pay due attention to the essentials of the ideal forage for these locations.

1. *Adaptability* to local soil and climate.

2. *Palatability.*

3. *Heavy yield of digestible dry matter* comparatively high in good quality of protein and mineral nutrients, the latter of which should preferably be alkaline in character. The calcium and phosphorus content had best be high, and the crude fibre low.

4. *A narrow nutritive ratio* which will enable the animal to eat a minimum amount of material to do a maximum of balancing.

5. *Succulence.* (Which should not be excessive.)

6. *Long pasturage season* preferably coming early, staying through the hot, dry and sultry summer, and remaining late.

7. *Endure trampling,* so essential in securing a maximum of grazing food.

8. *Permanency.* The perennials such as bluegrass and alfalfa are most superior in this regard.

9. *Should be seeded with comparative ease and at reasonable cost.*

10. *Had best be leguminous in nature,* because we need the nitrogen which may be gathered from the air, thus insuring up-keep in this high priced element of fertility.

Our experience is that of all crops alfalfa comes nearer furnishing these essentials than any other, but nevertheless rape, red clover, blue grass, (preferably mixed with white or alsike clover) and sweet clover, (especially the first year's growth) stand high in relative merits.

To squarely place before you some definite, usable figures regarding pasturage indispensable to successful pork production, we place before you table I.

PROFITABLE PASTURES FOR PORK PRODUCTION.

IOWA EXPERIMENT STATION, ANIMAL HUSBANDRY SECTION.

Spring Pigs of Current Year.

Forage or Pasture	Year	Average No. swine to acre	Days pastured	Average final weight	Average daily gain	Feed Required for a hundred pounds gain		Total feed cost of 100 lbs. gain, corn @ 50¢* and tankage at $2.50	Net profit of an acre corn @ 50¢ and hogs @ $6	Net return of a bushel of corn, hogs @ $6
						Corn shelled	Meat Meal or Tankage			
				lbs.	lbs.	lbs.	lbs.		$	cents
Bluegrass and timothy	1909	13.9	165	161	.72	380	13	$ 4.09	$ 31.85	75.6
Bluegrass and white clover	1912	26.6	180	206	.98	328	44	4.06	121.54	82.2
Alfalfa	1912	44.1	190	152	.64	398	none	3.46	†124.63	84.7
Alfalfa	1912	43.5	190	215	.94	329	24	3.50	†184.92	91.5
Red clover	1910	18.7	141	158	.85	371	none	3.71	51.20	84.6
Red clover	1910	18.7	141	198	1.13	299	35	3.84	64.55	90.4
Rape	1910	20.0	141	194	1.10	293	34	3.79	68.64	92.2
Rape	1912	25.0	160	159	.81	338	none	3.25	89.19	94.7
Rape	1912	25.9	160	178	.93	316	25	3.64	90.84	90.9
Rape	1912	27.3	160	184	.96	311	38	3.88	89.19	87.2
Rape	1912	28.3	160	183	.96	309	44	4.00	86.89	85.2
Sweet clover first year's growth	1910	22.5	141	182	1.02	314	25	3.70	74.50	91.0

*Beginning 1912 corn grain as fed on the cob is charged at 49c for 56 pounds, this allowing the hogs a cent for shelling as compared to other years.

†Hay credited at $10 a ton, respectively 2329, and 1880 pounds to the acre. If proportionate production charge is made on basis of the hay eaten by hogs, as compared to plot not harvested partly by them we have costs running respectively $3.65 and $3.62. Briefly the basis is to charge hogs simply with hay they eat (Supposed the field costs $10.75 an acre, and yields 5 tons normally,—but hogs on same eat 4 tons of this; charge them four-fifths of $10.75) plus loss of approximately 5 per cent due to shattering and soiling of remaining hay and the extra labor and machinery costs necessitated in mowing, raking and loading to insure upkeep of alfalfa hog pasture.

§Credits corn with all profits after paying for forage and supplement.

That alfalfa, red clover, rape, blue grass and sweet clover (in the first year of its growth) are presented in this table to the exclusion of the other forages means that these are really the standard hog forage crops of the Corn Belt. We have placed blue grass first on the table because this is the most common pasture grass, not because of superiority. Blue grass is a most excellent pasture especially when combined with clover, having the advantage of coming early and staying late, but having the very serious disadvantage of drying up when pasture is most needed, namely, during the dry, hot days of July and August.

That blue grass should be improved by the addition of clover as compared to timothy is manifest. Timothy added to the blue grass pasture is not to be commended. Timothy tends to widen the ration when it should be narrowed and furnishes additional crude fibre when less is in order.

Alfalfa is really the best forage crop for hogs. Alfalfa yields permanent pasture which returns high acre profits and enables the hog man to secure a maximum of cents for the corn marketed the alfalfa way. Alfalfa, however, is excelled by Dwarf Essex Rape in this particular: rape requires less protein supplement along with the corn fed hogs in it than does the alfalfa simply because rape furnishes a high proportion of protein in a mixture of food constituents, said mixture having a very narrow nutritive ratio. Furthermore, our observations have been that hogs eat more rape than alfalfa especially when they are young; this naturally affords opportunity for the balancing of a larger amount of corn. The happy combination suggested is alfalfa-rape, the latter being used largely to obviate the necessity of buying high priced protein supplements.

Peculiarly enough, taking an early one in a continuous series of years as a standard of comparison we find that rape produces pork more cheaply under our conditions at Ames than does alfalfa. It is to be remembered that rape can efficiently be used only as a pasture or soiling crop whereas alfalfa may be mowed and cured as hay, thus doing away with loss in time of disease epidemics which decimate the farm in forage consuming animals. Alfalfa is a legume thus insuring nitrogenous fertility upkeep, with its resultant higher yields as the years go on; herein rape is at a serious disadvantage.

That alfalfa should return a net profit on the acre of $184.92, charging the corn (shelled basis) at 50c a bushel, the meat meal at $2.50 a hundred, the alfalfa at $10.75 an acre, and crediting the hay at $10 a ton and the hogs at $6 a hundred is somewhat surprising. This assumes that the difference between the farm and market value (charged) of corn plus the manure produced and its uniform distribution without leaching loss, offsets the labor of feeding, management and marketing of the hogs; risk and interest on the hog; and the depreciation and interest on the equipment. This is merely an assumption and is not given as a stated fact, but nevertheless gives an understandable basis from which to reason and figure.

That 91.5 cents should be returned for every bushel of corn marketed through the hogs on this alfalfa pasture, all the profits being centered upon corn, is somewhat gratifying to those men who have long since appreciated the high value of alfalfa pasture.

That alfalfa needs supplement, although only in small amounts, is clearly shown in a comparison of the two trials presented. In the first no supplement was fed while in the second one pound of meat meal containing 60 per cent of protein was fed for approximately every 7½ to 8 pounds of corn grain. The gains are shown to have cost the same, but the close observer will readily see that where no supplement was fed the pigs were carried to the light weight of 152 pounds, where with supplement in the same length of time they reached a weight of 215 pounds; assuredly the putting on of this extra 63 pounds is somewhat expensive, relatively speaking, costing in the neighborhood of $4.50 a hundred with feeds charged at similar prices as when on alfalfa. When we take into consideration the lessened risk, labor, interest and so on, due indirectly to the large gains and quick marketing (directly due to the meat meal added which kept up the appetite and insured thrift and growth) the practical advisability of feeding a little supplement is strengthened.

Rape requires very little if any supplement. Our experience indicates, and the above figures are in line with this, that about 5 per cent as much meat meal as of corn is sufficient in the growing and fattening of spring pigs while on rape. It seems that the added supplement insures a better growth which economically reflects itself in faster and more efficient gains after forage is gone; this small amount of meat product supplement may derive some of its advantage from the fact that it furnishes those amino acids which are essential in meat production, and which may possibly be lacking in rape. Another possible explanation of the greater efficiency may lie in the added mineral elements having an alkaline reaction.

Sweet clover in the first year of its growth is an acceptable forage. Living two years as it does the first year's growth is inclined to be much finer, and of better texture, and more leafy than that of the second year. Ordinarily sweet clover only grows about 20 to 30 inches high the first year whereas the second year a man can lose himself even though on horseback in it. The second year is the "seeding year," which means that the plants become woody and coarse, yielding a maximum of crude fibre, and a minimum of leaves, this being especially true after the first couple of months of growth. Our experience with the second year's growth of this clover as a hog pasture has not been gratifying; it has rather been discouragingly disappointing. If one insists on pasturing the growth of the second year, which is entirely the practical thing to do very early in the season, he should insist that the growth be pastured down quite severely in order to prevent the plants "shooting for seed," which inevitably brings woodiness. All experience indicates that this heavy pasturing in the second year is to be encouraged if maximum efficiency is to be secured from the season's growth.

SOY BEANS AND COWPEAS OUTCLASSED.

That soy beans and cowpeas merit little, if any, attention as a hog forage in northern sections of the corn belt is quite clearly demonstrated in the summary presented for your consideration in Table II.

TABLE II.

Soy Beans and Cowpeas are Clearly Excelled in Northern Corn Belt by Standard Forages: Alfalfa, Red Clover, Rape, Bluegrass and Sweet Clover. Iowa Experiment Station, Animal Husbandry Section. Summer Pigs of Current Year Weighing Nearly Fifty Pounds—1913.

Forage	Average No. swine to acre	Days pastured	Average final weight	Average daily gain	Feed Required for a Hundred Pound Gain		Total feed cost of 100 lbs. gain, corn @ 50c* and $6, meat meal at $2.50	Net profit of an acre, corn @ 50c and hogs at $6
					Shelled corn	Meat meal		
Soy beans	31	30	64	.55	320	none	$ 5.28	$ 3.76
Soy beans	31	30	65	.50	359	35	6.71	3.31†
Cow peas	31	30	55	.26	596	none	10.53	11.37†
Cow peas	31	30	58	.34	472	44	9.95	12.40†
Rape, check lot	142	30	68	.72	276	none	2.74	101.12
Another test of the year 1912, showing soy bean inferiority.								
Soy beans	40	41	120	.79	414	none	4.71	13.75
Drylot, before§ and after average			87					
Drylot, before§ and after, average	27	66	164	1.10	318	42	3.83	----------
Bluegrass after§	56	50	136	1.34	321	48	4.05	262.00

*Shelled basis, this allowing hogs a cent for shelling grain off the cob.
†Indicates loss.
§Of the original pigs on soy beans, one-half at close of bean season were put on bluegrass and the other half in dry lot.

The superiority of rape over soy beans and cowpeas is manifest not only in the average daily gain of the 1913 test but in the lesser cost of gains and in the larger profits on the acre basis. Under average Iowa conditions counting rent at $6 an acre it costs approximately $12 to $15 to grow an acre of cowpeas or soy beans.

In the 1912 feeding trial the soy beans cost $13.96 an acre whereas alfalfa cost only $10.75, rape $9.28, and bluegrass $6. The $13.96 cost is distributed thus: $6 for rent on land, $2.80 for preparation including plowing, double discing, harrowing and drilling, 50c for inoculation and $4.66 for seed. This seed was charged at current rates of $3.50 a bushel, which counting additional cost of freight, drayage and so on, is a very reasonable nowaday cost. In 1913 the cost of the soy bean pasture was $12.80 on the acre, the lesser cost than in previous years being due to a little lighter seeding. Dwarf Essex Rape in 1913 cost $9.28, this cost being distributed as follows: $6 for rent, $2.80 for preparation, 48c for seed; but even though the cow peas and soy beans had cost the same as the rape, the profits would have gone "rapeward."

That there should be an actual loss on the acre in both cow peas and in one of the soy bean fields is somewhat discouraging to the cowpeas-soy bean enthusiast. Certainly $3.76 is a magnificent apparent profit as compared to these other adverse showings. That this $3.76 is apparent profit one realizes when he compares it with the $101.12 return on rape, the basis of figuring being identical.

That soy beans are excelled by bluegrass was brought out in 1912. Although the pigs were fed on bluegrass after coming off the soy beans (at a time when their gains should really have cost more, conditions remaining unchanged) they still make cheaper gains than they had in their younger days on soy beans, is convincing as to the demerits of soy beans and merits of bluegrass. We had two soy bean fields this year (1912) the hogs on one receiving a full and the other only a half feed of corn. The field giving the best returns, or namely the one in which the hogs had been full fed is the one given for your consideration. That these fifty shoats should make more rapid and cheaper gains in dry lot (the average of their performance before going on and after coming off soy beans) than when in the beans is not necessarily a commendation of dry lot feeding but rather a condemnation of soy bean pasturage.

These striking adverse showings of soy beans and cowpeas in central Iowa are not to be interpreted as expressive of results in the southern states. In the south both soy beans and cowpeas do relatively better than they do with us above the forty-first parallel, and furthermore, the crops we have here do not do so well in the south, which means that conditions are entirely changed. The use of soy beans and cowpeas in the south is not to be discouraged but we must remember that competition with peanuts and Lespedeza or Bermuda grass in the south is not so keen as competition with bluegrass and alfalfa and red clover and rape in the north. Then again, in many sections of the south cowpeas and soy beans are available as green feed, furnishing both forage and grain (grain in the cowpeas and soy beans is relatively more valuable in the south than in Iowa because of relatively higher values of other grain concentrates), early in the summer season when there are practically no competitive green crop rivals; this is the period, usually between winter crops, such as rape, and the late summer crop peanuts. When the southern farmer learns to grow permanent alfalfa successfully, these emergency "grain and forage producing legumes" will have some lively competition.

Col. H. S. Allen, Russell, Iowa, gave the following paper on the subject, "Private Sales."

PRIVATE SALES.

H. S. ALLEN.

Brother Breeders and Gentlemen: One of the first essentials of successful private sales is delivering the goods advertised or described in the correspondence. Another thing that should always be observed is to have your animals in good condition, and when ready to ship, see that they are well cleaned, free from lice, and put in a clean substantial crate. In describing the animal, do so in a clear business way telling your correspondent the bad points as well as the good. When you get an inquiry answer the letter by return mail if possible. Make an effort to find out what type your correspondent wants. If you have it send it to him. If not, frankly tell him so.

I find that my best customers through private sales are my old customers, and these are won and held by square dealing and shipping a hog that will do them good. Another very essential thing in private sales is to be able from the description that you get to be able to tell the kind and type of hog that your correspondent wants. I know from my own experience in receiving hogs by mail order that some breeders are either a poor judge of the type and kind of a hog that their correspondent wants or are evidently a poor judge of type and character themselves. I find that the best method in both public and private sales is to do by your customer as you would like to have him do by you. In other words observe the Golden Rule and you won't have very much trouble.

Another very important point in private as well as public sales not to be overlooked is to be prompt in sending out the pedigrees of animals sold. I have known breeders to put this off for months. This don't leave your customer in a very good humor and he is righteously indignant, and this in all probability is the cause of losing many future sales. Many breeders do not realize the importance of the pedigree to the buyer. Whether he be a farmer or breeder, the buyer wants to know the pedigree before using the hog, as it enables him to keep from inbreeding. And if he be a farmer it would in all probability cause him to take a greater interest in pure bred live stock. It also gives the buyer the impression that the seller is careful with all the records connected with his business.

Shipping on approval. This is one of the phases of the business I would handle carefully. I don't believe in shipping on approval at all times as I have known cases where the buyer did not have judgment enough to know when a good hog was shipped him and worked a hardship upon the seller by returning an animal that was worth more money than was asked for it. On the other hand if you know your man to be a good judge and an honest man I believe in shipping on approval, and when shipping on approval I think it a good plan for the seller to pay return express charges as this shows each is willing to play fair. When you ship out always let your customer know about when you ship and don't fail to keep your word. Gentlemen, I thank you.

Col. H. S. Duncan, Clearfield, Iowa, gave the following paper on the subject, "A Public Sale of Pure Bred Breeding Stock."

THE PUBLIC SALE OF PURE BRED BREEDING STOCK.

BY H. S. DUNCAN, CLEARFIELD, IOWA.

As a system for selling pure bred stock the public sale affords so many positive and distinct advantages that argument for the method would seem unnecessary. The efficacy of the system is clearly evidenced by the fact that our most active and successful present day breeders have adopted it, and that the foremost breeds of live stock are those which have been kept conspicuously before the public eye by the auction method. So generally established, and so popular has this method of selling and buying registered live stock become, that the breeder who does not follow the custom is looked upon by the public with a degree of indifference, while the breeder who manifests a confidence in his neighbors, permitting them to compete publicly for his goods, wins their confidence, and will command their patronage, just as long as he gives them clean and honest auctions.

The public sale is unsurpassed as an educator upon the matter of values, types and breeds and gives great impetus to the improved stock breeding industry. The public sale proposition is not clothed in such mystery as to cause a breeder to hesitate and doubt his ability to make a successful sale and undergo the monotony, uncertainty and disappointment attending the private sale business. Far from being so, the process is very easy, and the results gratifying if one will but observe and carry out the details pertaining thereto.

First: The character and standing of a breeder among his neighbors is essential. If the public esteem a man's word and know him to be honest, personality other than this is of little consequence. I have in mind a great number of breeders who might not be termed "smooth" or "clever" but better, they are honest, and their sales are always successful.

Second: The sale offering should be presented in good breeding condition. Doubtful and inferior animals should in no case be listed. This does not imply that every animal must be a high class individual, but those that are not superior to the common stock of the community should by all means be eliminated.

Third: The sale should be dated far enough in advance that the offering may be shaped up for the occasion, and also allow a sufficient time in which to thoroughly advertise the sale. Advertising is very important, and I heartily commend the use of the agricultural press. A sale offering which will not justify advertising in a live stock journal, should not be sold for breeding purposes. In addition to these, a sale should be given notice in the local papers covering a radius of fifteen miles. Ten days prior to the sale, bills should be posted at the cross roads, and in business houses in the local territory and a general announcement of the auction made over the local phone lines the evening before the sale. Sale catalogs should be gotten out by the time the first advertisement appears so that inquirers may be promptly supplied. Ten days before the sale, mail catalogs to those on your mailing list, which should in addition to the breeders' names, include those of fifty or more farmers living nearest to you. Follow this with a circular letter or postal card notice three days before the sale. See that your catalogs are complete, and free from error, using foot notes that will do the animal justice without exaggeration.

Solicit mail bids to be entrusted to your field men or auctioneer, and reserve 150 catalogs for sale day. In determining upon where to hold the sale you should consider the convenience and comfort of the public. As a general thing, it is better to hold winter sales in town; however, there is no established rule on this point. If the sale is within driving distance from town, furnish free conveyance and see to it that the service is prompt. Furnish free entertainment to parties from a distance and have free lunch for everyone.

Fourth: Provide a comfortable place in which to hold the sale. If there is no barn suitable for the purpose, do not hesitate to hire a good tent. Have seats for the crowd, and be sure that seats are secure. If a swine sale, do not have sale ring more than eighteen feet across, enclosed with patent fencing thirty inches high, bringing seats well up to the ring. For cattle and horse sales a larger ring is of course necessary.

Fifth: Class and arrange your stock in the pens or stalls so it will appear to the best advantage, numbering each animal so as to correspond with catalog number. Number swine with paint, and place numbers on back just behind the shoulders. Never depend upon ear tag numbers for the sale ring, and be sure there is no error in the numbering. For cattle place cloth or paper numbers by pasting on each hip, and for horses attach numbers to halter. It is always best to number your offering the evening before sale, or very early sale morning. Never delay numbering until the crowd is arriving. Procure a sufficient number of helpers, and give instructions so that each will know what is expected of him. Arrange entrance and exit to the sale ring, so there can be no delay in getting the stock in and out. Everything should be completed and ready by nine o'clock sale day, with nothing for the proprietor to do but receive guests, and look after their comforts. Extend to your neighbors the same courtesy as to those from a distance, and make everyone feel at home.

Sixth: One hour before sale time have lunch served, and have plenty. Be ready to start the sale on time. With your helpers instructed as to the order in which the stock will be sold, your place during the sale is near the auctioneer. Be prepared to answer all questions regarding the stock, and do not withhold or cover up any of the facts. Be brief and to the point, and also be pleasant. If an animal sells for less than you were expecting, do not complain for the next may bring you more than you expected. At this particular time in the sale, the success with which you are to meet depends entirely upon the ability of the auctioneer on the block. If you have employed an expert salesman, a man who is familiar with every phase of the business now at hand, you have done wisely. But if you have tried to save a few dollars by hiring an auctioneer, whose only recommendation is a low fee, and placed within the hands of an inexperienced salesman, the responsibility of getting you a reward for your effort in caring for the offering, and getting ready for the sale, may the good Lord pity you. Employ the local auctioneer through courtesy and to prevent a farm sale being held in the neighborhood the same day. He can also help in advertising, and work in the ring. The field men representing the live stock journals in which you have advertised the sale are all good ring men, and they are always ready and willing to help a sale in every possible way. Where you expect them to help in the ring, always supply your clerk with a few sheets of carbon paper, so that he can furnish each of them with a complete list of the sale when it is concluded, and thus avoid the delay entailed by the ring men also having to clerk the sale while it is in progress.

Seventh: Employ an experienced clerk, and have your pedigrees all made out in advance of the sale, leaving them with the clerk to give to the buyers when settling. Instruct your clerk to settle with the advertising men and auctioneer just as soon as the sale is over. Be as interested in conveying parties back to the station and saying good-bye to them as you were in greeting them. Make every promise and agreement good, and you will find your reputation extending from year to year, your sale averages increasing, you will become an exponent and advocate of the one great, effective method of selling, and you will attain a success otherwise impossible.

W. M. McFadden, Secretary of the American Poland China Record Association, Chicago, Illinois, gave a brief discussion on "Some Points to be Observed by the Breeder." He said that the Iowa Swine Breeders' Association had accomplished more results than any other swine breeders' association of which he knew. He stated that in his judgment those who were engaged in swine breeding should make it their principal business. It should be the central idea around which farm operations should circulate. A hog man should be a hog man 365 days in the year and should be enthusiastic every day. He should have stationery which would be a credit to him and which would add dignity to his business. He should raise what people want instead of what he happens to like best. He believes it is an art for the breeder to be able in advance to realize the demands of the future and take advantage of them. The wise breeder is he who sees and knows fads and gets in line so as to avoid suffering from hog bubbles. Salesmanship is important. Individuality of animals should not be overlooked. Feed and care are strong features. He stated that success can not be obtained without well bred stock to begin with. Good care, good feed and good sales. He advised that in the disposition of the stock the breeder should adopt one of three plans; a private sale, a public sale or through the show circuit.

Col. John Tupper of Woodbine, Iowa, spoke briefly on the subject, "What to Do with the Kicker in the Show Ring and Elsewhere." There was general discussion of the subject, "How to Grow the Pig from Birth to Maturity." We are indebted to the Iowa Homestead for its report on this discussion and also on the talk given by Dr. C. H. Stange of Ames, as follows:

HOW TO GROW THE PIG FROM BIRTH TO MATURITY.

The gentleman who had been assigned the subject of "How to Grow the Pig from Birth to Maturity" was not present, but an informal discussion on the matter followed. W. Z. Swallow said he started pigs with new milk, shorts and a little corn. He thought that the milk of one cow fed to a litter of five pigs would make the pigs have a value in the fall sufficient to pay for a good cow. R. R. Blake said he fed new milk, oil meal, and tankage and gave the pigs the run of a clover pasture. Secretary Hancher fed a variety, including oil meal, tankage, bran and shorts three times a day with shredded corn two times a day and gave them access to a blue grass pasture. He increases the proportion of corn as the pigs grow older. Nothing, he said, finishes a pig as well as corn. He fed bran to add bulk. He said that little pigs fed five times a day did well, but that for older ones feeding three times a day answered the purpose. He feeds tankage and oil meal on pasture. He slops before giving the grain feed. He uses 100 pounds of bran and 400 pounds of shorts and includes about a quart of salt to each barrel of slop. He believes in feeding often and only so much as the pigs will clean up each feeding time.

METHODS OF CONTROLLING AND ERADICATING HOG CHOLERA IN IOWA.

Dr. Stange took up as the subject of his talk "Methods of Controlling and Eradicating Hog Cholera in Iowa." He stated that the eradication of hog cholera is most difficult in practice. Cholera had first presented itself in Ohio in 1833, and it had gradually spread until it was now common in practically every country in which hogs are raised. It seemed that hog cholera came in waves, that it would become prevalent for three or four years with increasing fatality, and that it would then begin to disappear. This year, he said, it would probably reach the high point in Iowa and begin to grow less. Few disease germs have so great vitality as those of cholera. Carbolic acid does not injure them and the germs have been known to live for two years. Hogs that once pass through cholera do not have it the second time. Sucking pigs do not become readily infected. Some preventives may have merit. Most of them claim too much. There are two forms of hog cholera lesion, one of which appears in the lungs and the other in the intestines. When they have the form found in the lungs the affection is commonly spoken of as swine plague. This form is most serious. Buyers should quarantine animals brought to the farm for three weeks before permitting them to mingle with the farm stock. After an animal has been exposed to cholera the contamination will show itself in less than three weeks. Every precaution should be taken. Hogs should not have access to streams rising outside the farm. Streams are the most common means of spreading cholera. Stray dogs assist. Crows and pigeons do their share. Hog buyers and neighbors should be excluded from the herd in times when cholera is threatened. Dr. Stange thinks the simultaneous method of inoculation is the only one of real merit. He thinks that the introduction of cholera at the time of inoculation should be through vaccination and not from pen exposure. Hog yards should be broken up and put into cultivation, disinfected by the use of lime and other methods. When a herd has been vaccinated, corn should be withheld from their ration for one or two weeks. Green corn has a predisposing influence towards cholera. He thought successful vaccination depended as much on the manner of the use of serum as on the serum itself.

Grand Champion Beckshire Herd, 1913 Iowa State Fair and Exposition, Iowana Farms, Davenport, Iowa.

PART VI.

Annual Meeting Corn Belt Meat Producers Association.

WEDNESDAY, DECEMBER 10.

MORNING SESSION.

The tenth annual meeting of the Corn Belt Meat Producers' Association was called to order by President A. Sykes at the Savery Hotel, Des Moines, at 10:30 a. m.

The invocation was delivered by Rev. J. F. Jamieson.

President Sykes thereupon read his annual address, as follows:

PRESIDENT'S ANNUAL ADDRESS.

Mr. Chairman and Gentlemen:

The time for holding our annual meeting has again arrived, and I wish to extend to the delegates and members a hearty greeting, and assure you that we appreciate your presence with us, and hope that you will feel quite at home, and that this is your meeting, and you have a perfect right to participate in its discussions.

As president of your association, it again devolves upon me at this time to give the delegates and membership at large a somewhat summarized report of the work of the past year.

Since the last annual meeting, things have been rather quiet in the association, and little spectacular work has been done that would bring your organization into the limelight. For this reason, my report will be materially shortened.

As you will remember, the general assembly of Iowa was in session during last winter and spring, and a multitude of demands was made on your executive committee to appear before different committees in the house and senate, to be heard on different bills. Many of these bills had merit, their object being to benefit the farmer and stockman. On the other hand, bills were introduced that we felt would be injurious to these interests, and we considered it our duty to bring all possible pressure to bear to defeat such measures. Likewise, we "put in our best licks" in behalf of measures that we believed should be adopted. And while your committee did not succeed as well as hoped, and did not accomplish everything desired in either direction, I am sure that each member felt that good work was done in your behalf, and that your interests were safeguarded and looked after in a way that they could not have been had you not been organized and in a position to present your claims in a manner to demand consideration. In this connection I wish to drop the suggestion that you and your interests were not presented to legislative committees before the organization of the Corn Belt Meat Producers' Association, and unless you maintain your organization and have men whose duty it is to look after these matters at the proper time, you will have but little representation in years to come.

The calling of a special session of congress by President Wilson soon after his inauguration, for the purpose of revising the tariff, and the fact that the committee on ways and means in the house of representatives, of which Mr. Underwood was chairman, had been conducting exhaustive hearings on the proposed bill, led your executive committee to carefully analyze that portion of the bill affecting live stock and other farm commodities, resulting in the conclusion that the bill was unfair to the farmer and stockman, and that a protest should be made by your organization against those particular features, and an attempt made to amend them, so as to give the farmer and producer equal protection with the manufacturer. Accordingly, a committee consisting of your president; Mr. J. F. Eisele, director from the sixth district, and Mr. Charles Goodenow, your treasurer, was selected to go to Washington about the first of May, to present our claims to the senate finance committee, who were then considering the bill. On arriving in Washington and making some investigation, your committee found itself up against a stiff proposition, as the atmosphere in all of the big cities of the east was full of a clamor and demand on congress to lower the cost of living, and especially to reduce the cost of food products. We learned also that the finance committee had decided that no public hearings would be held by that committee on the bill, which decision meant that if anything was done by our committee the matter must be taken up personally with each of the ranking members of the senate committee. You can have some idea of the difficulty of that task when you understand that there were hundreds of men in Washington who wanted to see these same men on some part of the bill, and hundreds more who wanted to see them about some political job.

But we at once set about our heroic task, as we were determined to present our claims to these senators before we left. Through the courtesy of Senator Cummins, we were soon able to get into personal touch with the men whom we wished to see, but even then our progress was slow, as they were exceedingly busy, and some were out of the city, and it was very difficult to arrange suitable dates. In the course of about ten days we succeeded in holding a very satisfactory conference with each of the senators on the finance committee, whom we felt would practically have the shaping of the bill in that committee. We were received very courteously by each of the senators waited on. They seemed to appreciate hearing directly from the agricultural producers of Iowa, and for the most part we found them in sympathy with our position, which was simply that we were willing to stand a reduction in the duties on live stock, dressed meats and agricultural products, but that we did not think it fair to place our products on the free list and still give the manufacturers ample protection. In other words, we felt that the bill discriminated against the agricultural and live stock interests. When we left Washington, we had ample assurance that a strong fight would be made in the senate finance committee to retain the duties we were asking for, and it was then generally believed that the president would not seriously object to such a compromise. As you will remember, practically the same recommendations made by our committee were adopted and reported out by the senate committee in June. But by this time public sentiment in the east had so grown in favor of placing all food products on the free list that the president yielded to the demand and insisted on and secured the change in the bill which placed practically all of our commodities on the free list. We hope the president's views are correct in this matter, and give him credit for being sincere and honest in his position; yet we feel that the bill as passed is illogical and discriminating against the agricultural and live stock interests of our state, and that time alone must determine whether it would not have been better for congress to heed the protests and recommendations made to it by our committee.

FACILITIES FOR LOADING AND UNLOADING SHEEP IN DOUBLE-DECK CARS.

I wish to say a word here in the way of explanation for the benefit of our sheep feeders. About a year ago the officers of your association took up this matter with the Iowa Railroad Commission, with a view to having such facilities installed at all points where necessity demanded. However, upon investigation, it was found that the Iowa commission had no authority in such cases unless the sheep were loaded at and shipped to points within the state. This not being the case, we had to look elsewhere for relief. So the matter was taken to the Interstate Commerce Commission, where, to our surprise, we were informed that this important commission was woefully lacking in power to require the railroads to install such facilities, although the shipments were interstate. We then decided to confer with the superintendents of the different lines, and see if we could not induce them to provide such accommodations at points where there were sheep enough handled to justify them. In this we succeeded partially, as some of the roads have been installing these double-deck chutes during the fall, while others have paid no attention to our requests. The fact is that unless we can coax the railroad men to give you these accommodations, there is no way under the present laws to force them to act.

As to the 75 per cent rate on stocker and feeder cattle and sheep, I want to say once for all that all stocker and feeder cattle, and all sheep shipped in double-deck cars into this state for feeding purposes, are entitled to a rate which is 75 per cent of the fat stock rate, and I hope that none of our members will allow any railroad agent to blarney them in paying the full rate. I found a number of instances during the fall where the agent had charged the full rate on sheep, and declared to the farmers that there was no feeder rate on sheep. Under the rulings adopted last spring by the railroads, and incorporated in their live stock tariffs, the agent may require the shipper to make a signed statement to the effect that none of the shipment is intended for immediate slaughter, in order to secure the low rate. No farmer should refuse to do this if the stock is for feeding purposes. It would be well for our members to post themselves on all these important questions, and then they will be in a position to demand their rights and secure them.

SERVICE AND CABOOSE ACCOMMODATIONS.

At this juncture, I wish to refer briefly to the work done to secure better service and accommodations for our members in shipping their stock to market. This, like the last question discussed, is one that is very difficult to handle, as none of our railroad commissions are vested with the power to say to the railroads what they must furnish to the live stock men, either in service or accommodations. So it is purely a matter of securing the best we can by taking it up with the different railroad officials, presenting our grievances, and trying to convince them that we are entitled to better treatment. This course has been followed the past year with fairly good success. The facts are that the superintendents of our biggest live stock carrying roads have shown a disposition to co-operate with us in improving conditions in a way that is both commendable and encouraging, while others have given but little heed to our recommendations.

The plan followed was to visit the different division points where these stock trains are assembled, and talk with the stockmen coming in off the different lines; investigate caboose accommodations, and the speed of the trains, and the way the stockmen were looked after in making the transfer from one train to the other; and make a careful note of all matters that would affect either the convenience or welfare of the shippers. In this way, we were in a position to make intelligent suggestions and recommendations to the railroad officials when the matter was taken up with them. Under existing conditions, we believe that this is the most practical way of solving this vexatious question. While we will not get all we ask for, nor all we are entitled to, yet I believe if this plan is persistently followed, and our members will be prompt to report their delays and inconveniences in shipping, in time much permanent improvement can be made along this line on all the roads.

Another matter of importance taken up by your officers was the question of the valuation clause now printed in railroad contracts for transporting live stock; said valuations not to exceed the following amounts on the different kinds of stock:

Horses or mules	$100.00
Steers	50.00
Cows	30.00
Swine	10.00
Sheep	3.00

These valuations to apply where stock is killed in transit.

It will be remembered that about a year ago the supreme court of the United States handed down a decision in a damage case on an interstate shipment, carried up by the railroads from Nebraska, in which the court practically validated these contract valuations, and gave the railroads the right to charge a higher rate where an increased liability is demanded by the shipper. Previous to this decision, the railroads had settled such claims on the basis of the value of the animal killed, but for the past year they have refused to pay more than the amount specified in the contract. So you can readily see the risk incurred by our feeders and shippers in this state, where the average animal when fat is worth about double the valuation in the contract.

Your officers recognized at once the danger of heavy losses to our members and the feeders in general under such a system, and their first thought was to obtain relief by securing the passage of a bill by congress that would prevent common carriers from limiting their liability by contract. So the matter was at once taken up with Senator Cummins, and he gladly offered his services. Accordingly, a bill was prepared and introduced in the senate by him early in the special session of congress which was at once referred to the committee on interstate commerce. Owing to the pressure of tariff and currency legislation, however, no action has been taken on it to this time. Later, fearing that the bill might be seriously delayed by congress, we decided to file a petition and complaint with the Interstate Commerce Commission, as we believed they had ample power to correct the situation. But before the petition had been filed, Judge Cowan, who represents the American National Live Stock Association and the Texas Cattle Growers, wrote your secretary to the effect that he was working on a plan to secure a conference of the railroad and live stock men regarding an adjustment of the matter, and asked that our petition be withheld until the outcome of his efforts could be ascertained. His request was complied with, and later on we were notified that he had arranged the conference, to be held in Chicago, October 22d. He also urged that this association be represented at the conference. In accordance with the suggestion, your president and secretary, together with Mr. Thorne, chairman of the Iowa Railroad Commission, and Judge Henderson, Commerce Counsel, were present at the conference.

We found there a very large group of railroad men, representing practically all of the important western lines. Judge Cowan was also present, as were several officers and members of the Military Tract Live Stock Shippers' Association, of Illinois, and a delegation from the Live Stock Exchange, of Chicago. A brief conference of those representing the live stock interests was held, and all agreed that the present contract valuations were unfair and unjust, and that if animals were killed in transit, the owner should be paid full value for same. When the conference proper was called, the stockmen's position was presented by Mr. Thorne, Judge Cowan, and others, and a demand was also made that the railroad people notify the different live stock organizations as to their position in regard to changing the form of these contracts before December 1st. The railroad men did but little talking. They stated that they were not in a position to make us any proposition, as under their system matters of that kind were handled by a special board or committee appointed for that purpose; that such committee had been appointed and was working on the matter, and that they would do all they could to hurry the report so that it might be gotten to the stockmen by the time requested. However, up to date no word has been received intimating what the railroads intend to do.

As to the general field work of the association during the past year, I will say that, as usual during the winter, I spoke at a great many farmers' institutes and other farmers' gatherings, and endeavored in this way to encourage and inspire the farmers to support the association more generally. I am sure that this is the most successful plan for the winter's campaign, as a speaker has a better audience at such meetings, and a better opportunity to spread the knowledge of the work of your organization among the farmers and get them interested. I believe the local officers and members should see to it that at such meetings a place is secured on the program for a speaker from this association. If interest in it is maintained, we must keep everlastingly boosting, for we can not succeed by keeping still and not letting the farmers know what we are doing.

Regarding the summer's campaign for securing membership pledges I will say that while our fondest hopes were not realized, and we did not reach the goal we had worked for, yet I am glad to be able to report a good, substantial growth, and that we succeeded in replacing in the ranks of the association a number of county and local organizations which had not reported to the secretary for some time past. In all of the localities canvassed, we materially increased the membership over what it had ever before been, which proves very conclusively that the farmers are alive to the important work the organization is doing, and ready to help if solicited.

One thing that will quite seriously militate against our rapid growth in the future is the fact that the territory in which we have been organized has been quite generally canvassed under our pledge system, and it now remains for us to branch out into new and untried territory. As we have no advance guard in such new territory to assist in pushing the work among the farmers, it means increased labor and slower progress.

If some of our live local officers and members would get in touch with farmers whom they know in adjoining counties which are unorganized, and secure their assistance in making a canvass among their neighbors, it would materially assist in building up the association. This organization has been built up from the beginning by men scattered here and there through the state who were willing to sacrifice their time whenever necessary in order that the association might succeed; and we will find that the future will demand sacrifice of time the same as in the past if we are to go forward.

It may be that on account of the quiet condition of affairs affecting the work of the association during the past season, some of our members have felt that the organization was not doing much, and that for that reason they would withhold their support. If such a thought has been lurking in the minds of any, I would like to say for their benefit that it is not the province of this association to make issues, but rather to protect your interests when hostility thereto develops. Thus we place the burden of proof on the opposing parties, and make your defense much stronger. If by maintaining your organization and keeping it in fighting trim, we can prevent these opposing interests from springing these conflicts, or secure a satisfactory adjustment of them without going into the courts or before the different commissions, we are ahead in the end. In other words, if you can accomplish your purpose and secure about what you want without a long-drawn-out fight, which means a heavy expense, it is certainly to your advantage.

I am aware that some think that unless there is a great noise of battle, and your association is continually in the limelight on account of some big contest in which it is engaged, there isn't much doing; but I am sure that this is the wrong estimate to place on the real value of your organization, as some of its most important work is done in a quiet, unassuming way, with but little said about it. On the other hand, who would attempt to estimate the value of the association to the farmers merely by its existence, in preventing unjust rules and practices from being forced upon them? So don't be too ready to criticize, for you can not always measure what is being accomplished by what you see upon the surface.

One more, a word to our members in regard to filling out the shipper's reports and sending them to the secretary. Whatever you do, don't fail to do this, as these are of vital importance in securing better service and accommodations. We still find that many of our members are slow to send in their complaints about overcharges in rates and similar matters. Let me urge you again to send in all complaints promptly. This organization is maintained to help you when you are in trouble, but its officers have no way of knowing your troubles unless you report them.

Before closing this report, as president of your association I wish in this public way to express our appreciation of the loyal support rendered by every officer and member in building up the association and making it what it is. We thank you one and all, and may you live many years to enjoy the fruits of your labors.

There is also another class of men who have, I believe, contributed largely to the success of this organization, and to whom we owe a debt of gratitude. I refer to the men who publish our agricultural and daily papers. To these men, individually and collectively, I wish to say that we thank them most heartily, and shall always appreciate their support and co-operation.

In conclusion, let me especially urge upon you the importance of maintaining your organization. Don't think for a minute that because the past year has been rather quiet, there is nothing more for you to do. Remember the old adage that the greatest calm is just before the storm breaks. It is impossible to tell when the storm is going to break, so to speak, and if you are disorganized and your forces scattered, how will you defend yourselves? So, to my mind, and I believe to the mind of every man who will study the situation carefully, the safe way to proceed is to be always in trim and ready for a scrap. So, hoping that the Corn Belt Meat Producers' Association will continue to grow, and that its influence may spread and widen, and with implicit faith in a successful future, I commend it to your care, and beg for it your most enthusiastic support, assuring you that through such co-operation you can best serve your personal interests.

I thank you.

The following paper was then read by James M. Brockway, Letts, Iowa:

FEEDING TEXAS CALVES.

BY JAMES BROCKWAY.

For many years the business of cattle feeding has been becoming more and more a matter of speculation. The cattle feeder has not been able to determine in advance if he would reap a harvest or if he would find red ink in his bank account.

We were taught by our fathers that the process of fattening cattle was to buy our feeders in the fall or early winter, rough them through on corn stalks, a little hay, and what was left of last summer's pasture. This animal was invariably a three-year-old, he had finished growing, and when summer time came plenty of grass, and the feed wagon, he had nothing to do but to get fat. The three-year-old feeder is rarely found now nor is the three-year-old bullock so popular on the markets. Now it is the well-finished 800 to 1,000-pound baby beef that is the favorite.

Of late years the price of feeders and especially of heavy feeders has been high. The price of the raw material has been so near the price of the finished product that the margin of profit has been narrow and uncertain. I do not believe that today there is another class of business men who conduct business on a narrower margin of profits than the cattle feeder. The feeder should be as much entitled to a reasonable margin of profit as any other class of business men. I believe that a feeder should have a reasonable price for his roughness, his grains and his labor; and should have more to show for his profit than the value of the manure left in the feed lot.

For consistent success this element of speculation must be reduced to the minimum and feeding brought to more of a production basis. The corn belt feeder must become a real meat producer. As feeders we are handling a more costly and higher priced equipment than our fathers used. Our lands will produce no more and they represent ten times as much capital. Our corn has no greater feeding value and it costs fifty times as much. The price of a fat steer has turned several somersaults, and last but not least we have no more cattle and we have twice as many people to feed.

Here and there is a man who seems to successfully pick the high and low spots of the market, but this is not the case with the average farmer feeder, he wishes to market on his farm the forage and grains produced there and to do so in a safe and profitable manner.

Years ago our Scotch and English friends solved this same kind of a problem. They did so by learning to produce beef in a cheaper manner. They grew carrots, beets, turnips and roots of this sort, chopped them up with straw and flavored this mixture with a little American corn and a little American cottonseed meal, and fed this to their steers. The remarkable thing of it all was their cattle grew fat. They even competed with our American corn-fed cattle. I do not propose to advise the Iowa farmer to go down on his knees to raise carrots and turnips for his cattle, if for no other reason than because we can raise other coarse feeds that are better.

In every manufacturing business there comes a time when the margin of profits grows narrower and the waste products must be utilized. There was a time when every cotton gin had its pile of decomposing cottonseed, and the linseed oil manufacturer did not know what to do with the oil cake. In an early day the backbones and ribs of hogs slaughtered at an eastern Iowa packing point were hauled out and dumped on the ice of the Mississippi river. As a small boy I can remember how the fishing in the Iowa river was for a time spoiled because a glucose factory 140 miles upstream had dumped its waste products in the river. These same by-products are now a substantial source of revenue of these industries. There is today just as great waste going on upon the corn belt farm as any of those just mentioned. For years we farmers have been wasting 40 per cent of the corn crop. Not many manufacturing concerns could stand that per cent of loss. The problem before the corn belt feeder today is to use this by-product as the Scotchman uses his carrots and keep our corn and cottonseed meal at home.

I believe that beef making will become more and more a matter of production. We must learn to feed more roughness and less corn. A well-balanced ration but not a ration wastefully rich in grain. We are now and we will be forced to make beef on a narrower margin of profit and it is up to us to utilize our by-products. And I believe that they can best be used by developing a good calf into a first-class baby beef.

But where is the raw material to come from? Probably the ideal way would be to raise the calf that you expect to feed. But the average farmer cannot well do this. If one tries to pick them up at home or if one goes to the market for them they will nearly always be found to be a very miscellaneous lot and with no similarity of breeding. Many times a calf will look well enough and yet that same calf will be from a cold-blooded old skate of a cow, and it's a sure thing that the longer you keep that calf the more he will come to look like the cow. For this reason it is very important that the feeder knows what kind of breeding is back of his calves.

For a number of years we have been going to the great cattle ranges of Texas to buy our feeding calves. Nearly all the Texas herds are well bred now. Most of them are Herefords. It is not at all difficult to buy calves that show the very best of breeding. Today the ranchman shows a willingness to sell his calves at weaning time. But by the first of September he is making up his mind as to what he will do with his calf crop. If he is to carry them over he must be making the necessary arrangements for feed and grass. If he decides to sell them that is the time he is looking for a buyer's name on a contract. The feeder who goes on the range should be there by September at the latest. Contracts are usually made for October or November deliveries. About November first is the usual time. Of course calves can be bought at this time, but the price is invariably higher and the quality of those offered for sale is not so good. Calves bought on the range when landed in the feed lots will usually cost just about the same or a little more than calves bought at the Missouri river markets. But the quality and the breeding is much better. In most of the Texas herds a certain line breeding exists, the calf's mother, grandmother and great-grandmother probably all wore the same brand, and when the calves are fed out they will develop and will look alike. Buy as big a calf as you can, the bigger and stronger the calf the better he will winter, and of course get the best quality that you can, a dollar or two on a calf may mean ten when he goes to market. If you can, go to the range for the calves yourself, if you can't do this, give an order to some responsible party who does go. There are plenty of reliable feeders who buy calves on the range every year. If no other way, give an order to your commission firm and have them watch for a bunch of calves all from the same herd. In this case you have the disadvantage of knowing nothing about the cows and the bulls that the calves are from. If I could be assured that the condition and size of the calves are right I would give more to see the cows and the bulls than to see the calves themselves.

From Texas to Iowa is a long trip on a stock train. It will usually require about five days, and the calves taken from their mothers will neither eat nor drink much at the feeding stations and will reach home mighty tired and hungry. A good pasture with plenty of water is a fine place for them to rest up, but they will need a stronger feed than this, and if left on grass will begin to shrink at once. We have also had good success putting them directly into the feed lots.

Corn silage is the basis of our ration and this is the feed that makes cheap gains possible. As long as they are in the feed lots they are given all of this that they will eat. They will relish some dry feed with the silage and we usually feed some corn fodder or straw. For the first month or so we fed only corn fodder, silage and cottonseed meal. About a pound or a pound and a quarter per head a day of the meal. Don't fail to provide this or some other high-protein feed to balance this excessive corn ration. Clover or alfalfa hay would give a better variety but I doubt if they could make any cheaper gains.

About the first of the year we begin feeding five or six pounds of crushed corn per day. Be sure that they are eating all the silage that they will clean up, for remember it is the surplus food that the animal eats that makes the gains. It is the assimilated food that is not needed by our calf to keep up animal heat and growth that is laid away in the fat that makes the finish. As our ration is not a rich ration it is highly important that the calf gets all that he can use of it.

The above ration is continued on the heifers, which are fed in separate yards until they go to market; which is any time from May until July. We prefer not to put the heifers on grass at all. The steers will do more growing than the heifers. The amount of grain will be practically the same, but the heifers will obtain that finish or fat covering wanted by the butcher at an earlier age than the steer will. The steers are put on grass as soon as the ground in the pasture has settled in the spring, and the same silage and grain ration is continued. As the grass improves the silage may be decreased until by the time grass is good the silage is discontinued. At the same time that the silage ration is decreased the grain ration is raised so that by the time the silage is discontinued the grain is practically doubled. About ten or twelve pounds of corn on good pasture is all that we feed until five or six weeks before marketing. Then we give them all the corn they will eat. Cottonseed meal may be gradually decreased and finally discontinued after going on grass.

The most critical period of feeding is the time of going from silage to grass. Professor Curtiss has often told us than any changing period is a losing period. Therefore it is essential that we make as radical a change as this very slowly, and without sudden changing of the ration. Remember that silage is ever so much better and stronger feed than the soft new grass. One has all the sunshine of a long summer stored up in it and the other has only that of a few soft warm days. Be sure to let the silage lap well over a period of feeding on the grass.

Our feeding equipment and methods are very simple. We have only sheds with dirt floors for shelter. About one-third of the south side is open for doors. All shock corn and straw is fed in racks inside the sheds; the waste stalks will keep the shed bedded. Plenty of clean water protected from heavy freezing is also inside the shed. For fifty feet in front of the sheds and running their entire length is a concrete feeding floor and a concrete driveway extends to the silos that stand at the end of each shed. The silage, corn and cottonseed meal are fed in bunks twelve inches deep that set on the feeding floor. The lots and sheds are subdivided so as not to allow too many calves together and to make it possible to divide them according to size so that the stronger calves will not rob the smaller ones. We feed silage, corn fodder and cottonseed meal in the morning; another feed of silage after dinner and the small feed of corn just before night. Much better results are had by making the feed of grain at night both on grass and with silage. If fed at this time it is retained longer by the animal and I believe that it is digested better. If the grain is fed in the morning and the coarse feed fed later, there is a tendency for the corn to be crowded through the animal and not thoroughly digested. Feeding the corn at this time of the day is to our calf like the bringing on of the plum pudding after a turkey dinner; it is really not needed so far as the appetite is concerned, but nevertheless it is highly appreciated. Feeding corn at this time of the day insures that the animal is eating the surplus feed that will produce the quick gains and finish.

I do not advocate the feeding of Texas calves as a get-rich-quick scheme; I do recommend it as a means of marketing the products of an Iowa farm. When big cattle are making money as they do sometimes, they may do better than the calves, but one year with another, I believe that baby beef is a surer proposition. One is not so likely to find the lean years that come so often to the feeders of heavy cattle. With this manner of feeding we have not found it difficult to make 350 to 400-pound calves 700 to 800 pounds by July, and by September the steers go better than 900 pounds. In six or seven months we make them double their weight and make as much gain per head as some feeders get on heavy cattle in that time.

As long as the Texas calf can be bought at a price that is less than it would cost to produce that same calf on our good Iowa land, I believe that it will pay to go to Texas after him. If he costs much above that price we have the same element of speculation that we have now in feeding the big cattle and in this case each man must use his own judgment. I believe that the time is rapidly approaching when we will raise more good beef calves in the corn belt. I realize that everyone cannot feed calves, nor should they, and I may well add nor will they. I do not know of any country where a calf can be produced cheaper than in Texas, and I do not know of any country where that calf can be developed better than in the corn belt.

Mr. Gunn: How much cottonseed would you have as a maximum while they are on silage?

Mr. Brockway: I was figuring on the basis of three pounds cottonseed meal to one thousand pounds live weight, and I have always found that sufficient. I have fed more than that, but never saw that they made any better gain. About a pound to a pound and a quarter to a calf.

Mr. Hughes: Do you buy these cattle by the pound or the head?

Mr. Brockway: Always by the head; they won't have a set of scales at the stock yards. It is a well known fact that cattle develop poorly in the Panhandle. They have to go a long distance to water. They will not weigh as much as they look to, and the stockmen have learned that it is more profitable not to have any scales. Of course, the calf is a good proposition. You take it directly from the cow and put it on coarse feed and allow it to develop without having to develop its muscular system in order to carry it to where the feed is, and it makes an entirely different animal.

Mr. Hughes: Do you find that the change of climate affects him?

Mr. Brockway: The development of the animal will be different. I will venture to say that he will be a bigger steer in the corn belt than he would be in the Panhandle.

Mr. Eisele: About what do they cost down there?

Mr. Brockway: The calves this year cost all the way from $25 to $30.

Mr. Eisele: They weigh around 350 pounds?

Mr. Brockway: Yes, the biggest ones would weigh nearly 400 pounds. I will say that these heaviest calves were from a thoroughbred bunch of cows—stock taken down there from Missouri—probably Missouri Herefords.

A Member: What is the freight from down there?

Mr. Brockway: It will cost about $2.20 a head to land the calves here. Last year the same quality of calves cost from $22 to $25.

A Member: How do you cut your corn?

Mr. Brockway: I simply run the corn through an ensilage cutter and leave the cob with it. Personally, I don't believe in grinding corn for a calf. There is no animal that has better digestion than a calf, and I venture to say that they will derive more benefit from the feed if they take a little more time. If the corn is crushed they will not sort it out from the cob.

I want to emphasize feeding at night. I believe it is better for the animal to eat his corn at night and then lie down and digest it, and that you get much better results than by feeding at any other time.

Mr. Myers: Are you sure of your assertion that we should feed cottonseed meal?

Mr. Brockway: I have had success with it.

Mr. Myers: I have a neighbor who has been feeding ensilage for four or five years. He said he doesn't feed cottonseed meal; he feeds straw and chopped corn and a very little clover hay. He is a very successful feeder and has made money out of it. It might be different with younger cattle.

Mr. Brockway: In feeding calves I wouldn't know any better way to invite failure than by feeding an absolutely all corn ration—corn silage and corn fodder. I think it is absolutely essential, so far as my experience is concerned, to provide bone, hair and muscle building material, or the calves will not grow. They get big in the middle and smaller at both ends until you have no calf left at all, without the protein added to the ration.

A Member: Isn't the difference in the climate pretty hard on the calves for a month or two in Iowa, after delivery in November?

Mr. Brockway: Not at all; they will do just as well as our calves here. Of course, the shipment is hard on them; it will take them two or three weeks to get squared away.

A Member: Don't you think it is profitable to feed those calves corn ensilage and cottonseed meal through the summer until they are finished?

Mr. Brockway: Yes, sir. I think these calves could really be developed cheaper by feeding them right straight through the summer on silage, giving them all they will eat, the cottonseed meal, and a small ration—five or six pounds—of corn, than by feeding them grass. We have pasture and feed our steers on it. The heifers we feed clear through to marketing time in the lot on only the minimum grain ration and silage, and they will get fat without the full feed of corn. I think it is profitable to full-feed the steer the last few weeks if it is on grass. I usually market the heifers around April.

A Member: Do you have difficulty in finding the kind you want?

Mr. Brockway: Not at all; it is getting easier every year.

Mr. Goodenow: Can they be put on feed promptly?

Mr. Brockway: Very promptly, especially by putting a little salt on it.

A Member: Do you have any trouble with blackleg?

Mr. Brockway: I never have had a case; I may be lucky in that respect. The southern cattlemen have trouble with it right on the range. They use the government vaccine. I don't believe there are better bred cattle any place in the country than these white-faced calves grown in the Panhandle. I believe that blackleg is simply a germ disease, and that if you have it on your farm you will continue to have it unless you get it cleaned out.

A Member: Do you vaccinate the calves for blackleg?

Mr. Brockway: I never have. I know the loss is very disastrous sometimes. In one of the bunches of calves that I received this year two calves had died from blackleg within less than two days before they were received. The blackleg had been common in that range. If I had suspected having anything of that kind in the herd, I would have vaccinated them in a minute. They have splendid success by using vaccine.

A Member: How many pounds in a day do those calves put on when you start them at 350 to 400 pounds?

Mr. Brockway: The bigger the calf the more gain it will make. If they weigh 350 to 400 pounds the first of November, by June or July they will be weighing 700 or 800 pounds. The grain that they would eat would be about five or six pounds a day, with all the ensilage that they would take.

A Member: How many shotes can you run after these calves?

Mr. Brockway: You won't have very much hog feed. You will have a splendid place to keep your pigs exercised, and they will do well, but you have to feed them something besides. Of course, there is always a certain amount of waste feed.

A Member: Do the hogs do as well where you are feeding cottonseed meal?

Mr. Brockway: Yes, I think they do; I have never noticed any difference.

A Member: Wouldn't you rather have oil meal than cottonseed?

Mr. Brockway: I have fed both, and I feel that the calves do just as well, probably, on oil meal as on cottonseed; but the cottonseed furnished much cheaper protein. Just now it is pretty near a standoff, with cottonseed meal at 32½ and oil meal 29. Nearly always oil meal is $5 to $6 a ton more than cottonseed.

A Member: Wouldn't you prefer, in feeding oil meal, to feed at night rather than morning?

Mr. Brockway: No. I have fed at both times, and I would rather feed the oil meal in the morning. I feed my grain ration at night, and I think it would not be well to feed two concentrated feeds at one time. And, furthermore, I think by putting the cottonseed meal over the silage you get it better distributed than you would on the corn. Of course, in feeding this pound or pound and a quarter per head you have to watch that every calf gets his share, otherwise some calf may get two pounds and another not get any.

A Member: What do you think about feeding all the alfalfa hay the calf will eat?

Mr. Brockway: I would not think there would be much necessity of feeding oil meal.

Mr. Drury: The calf proposition at this time, with sixty-cent corn, is a pretty high proposition.

Mr. Brockway: Buy 22,000 pounds of heavy cattle and the same number of pounds of calves. For every thousand pounds original weight I believe I can put on twice as many pounds of gain on the calves as on the steers. I can come much nearer making that calf's gain pay for his feed than I can with the big cattle. I have the element of growth along with it. I thing a great many of these calves have been stunted by giving them too strong a grain ration. You pour all the grain to a calf that he will eat, and that not only gets mighty expensive from the feeder's standpoint, but I don't believe the calf will do as well as on half the grain ration.

Mr. Drury: To make twice that gain you have to keep the calf twice as long as the steer.

Mr. Brockway: The bunch of calves we had last spring were just as fat the first of April as the first of July. They were finished, rounded off and smooth as could be then, ready to go to market any time. The steers would have to have a full feed of corn five or six weeks to put that on. If you buy a good, well-bred bunch of calves, they will flesh down at an early age, and you can put the finish on just as early, I believe, as you can with the big cattle. These calves coming off the cows are fat when you get them, and I believe I can get them ready for market just as quickly as I can any bunch of big cattle in the same condition. If you feed them on a half ration of corn, with all the silage they can eat, you will find that they will go right ahead and every calf will make a good, reasonable gain. On a full feed of corn I never was able to feed a bunch of steers that there would not be a foundered one for some reason, you couldn't tell why. You feed hundreds of calves at a time and have the whole bunch go straight ahead. I don't know how you can beat a ration that will do that.

The President: What is your experience in the way of shrink in bringing those calves here from Texas?

Mr. Brockway: The shrink is something fierce. A 400-pound calf will shrink 50 pounds, without a doubt. They almost refuse to eat or drink from the time they are loaded.

Mr. Drury: Mr. Brockway can take his 1,000-pound steer, with silage and cottonseed meal and a little corn fodder, and put two pounds a day on it cheaper than he can on the calf by half. I am not finding fault with your argument. It is good business to follow if a man is in shape to handle it, but the calf proposition is the hardest one for a young man to start out on to make a success of.

Mr. Brockway: I can't say that I graduated, but I have fed heavy cattle for years before I fed calves; then I fed calves; then I fed heavy cattle again; and now I am back to the calves. I bought the first calves eight years ago in Texas and fed them a number of years, and then fed heavy cattle. I bought my first calves at $12 a head. They kept climbing up to $18, and I thought I couldn't afford to pay that much and went back to feeding heavy cattle; and I found the calves paid me higher profit than anything I could put in the feed lot; that my calves would make almost as much gain per head as the cattle would.

A Member: What did you get for your calves last year per pound?

Mr. Brockway: The heifers brought around $8.70, and the steers a little better than $9.00. I have never failed to come within 15 cents of the top any time, out of 575 calves shipped last year.

Mr. Drury: I fed six loads of cattle this year—five loads of steers and one load of baby beef. I put my big steers on cottonseed and silage, with very little corn. I turned the first two loads of cattle in May, and the next two loads in July. The first two loads made me 8 cents and cost me 6 cents. My two loads in July brought me 8 cents. My last load of baby beef I shipped to Chicago two weeks ago and it brought me 8¼ cents. They were kept longer, and I had but little more gain than I did on the big cattle.

Mr. Brockway: My big cattle never did as well on silage and grain ration as my calves did.

The President: This is a very interesting question, but we will have to bring the discussion to a close. The next number of the program will be a gentleman who will introduce a subject not announced, and that is the question of insuring this stock in transit. There have been quite a number of inquiries in regard to that matter, and we took it upon ourselves to write the company and ask them to send a representative to this meeting to explain the matter to our members. I now introduce to you Mr. Wm. E. Brandt, special agent from Chicago.

INSURING STOCK AGAINST ACCIDENT IN SHIPPING.

Mr. Brandt: Your president in his address made reference to the recent supreme court decision in regard to the valuations in these contracts. A man today shipping his stock on interstate shipments can only recover $50 a head for a steer. The price of cattle has gone up so much that values are running far in excess of this amount; so we have gotten out a form of insurance to give a man extra protection which is independent of the railroad liability. We will insure your steers while in transit, from the time you load them to the time you unload them at the market, for $30 a head, cows $20, hogs and calves $10, and sheep $3. This insurance is accident insurance and covers wreck, derailment, collision, fire and lightning, while on the road. The insurance only costs 50 cents a single deck car and 75 cents a double deck car, no matter what distance or to what market. The premium for this insurance is collected by the Stock Yards Company at the different markets, along with the freight charges. You take out an application for this insurance and we issue you what we call an open policy which covers every shipment that you make from that day on. Your shipments are automatically insured. It is not necessary for you to give any notice to the company. This insurance plan has been inaugurated at Sioux City, South Omaha and Chicago, and will be in effect at Kansas City within the next week or ten days. It is a proposition that has been indorsed by the different commission exchanges at whatever markets we have inaugurated it, and it has been recommended by the commission men.

I have been asked why we didn't cover different features, such as rough handling and smothering and all that sort of thing. Well, we are not live stock men, and these things have to be brought to our attention for consideration; but I wish to say that we have now under consideration these different features, and we are securing statistics from the different markets to show the loss ratio, and it may be possible that we can inaugurate some scheme to cover most of the liabilities in transportation. Of course, we can't do it at 50 cents a car, especially on hogs; but for the present, until we have some new legislation, it would seem that this would be a good plan for the shippers to get additional protection, on account of their only being able to recover so much per head, which does not come up to the actual value of the animal today.

Q. How about insurance at the yards?

Mr. Brandt: That is a different proposition entirely; that is carried by another company. Our responsibility ceases just as soon as your cattle are unloaded at the chutes at the market, and the yard insurance is taken up as you cross the chute scale, so I understand.

Q. Suppose they die from the heat?

Mr. Brandt: We don't cover that, but we have it under consideration.

A good many men have said to me that this is a good thing for the company, but it doesn't benefit the shipper much, for the reason that the percentage of risks is very small. The government records show that there are fifty wrecks and derailments a day. The risk that the individual assumes is too great, and if he should have a wreck, and under the present contract recover only $50 a head for a steer, which would probably be only half the value, he could not afford to assume that risk and take the loss, because it would cripple him for a number of years to come, and when he can get the protection at 50 cents a car it would be advisable for him to take it out, in my estimation.

Q. Why don't you make it more than $30?

Mr. Brandt: When we got out this policy we thought that $80 per head for steers would cover the average run, but I have since found out that stock is worth a good deal in excess of that amount. Of course, we got our figures from live stock men, and they misinformed us.

Q. What do you call a calf?

A. I don't know myself what a calf it. We are relying upon live stock men for the information. I expect the adjustment department of our company will have that information.

It costs a man nothing to take out this policy; we issue it free; and if you take out an application for a policy today, and you don't ship a car of stock into the market until next spring or fall, you are not required to pay a cent until you actually bring your stock into the market; then the stock yards company collects the premium.

Q. What is the life of your policy?

Mr. Brandt: Until you cancel, which you have the privilege of doing any time.

Q. If a car is wrecked and two or three head in it killed, and the rest turned over to the railroad company, do you pay for the actual number killed?

Mr. Brandt: We pay for actual death; it is a death policy. In the case of the recent wreck at Council Bluffs, where the cattle were maimed and set on the ground, we covered the death there, too. We don't pay for damage; it is a death policy.

Q. Suppose a car is wrecked and two cattle out of twenty killed; do you pay for two of them?

Mr. Brandt: Yes.

Q. You allow the railroad company to take the other eighteen?

Mr. Brandt: Oh, yes; we would have to do that.

A Member: We get $1,000 from the railroad company and $60 from you, and the railroad company sells for $1,800. I don't see where we are ahead on that.

A Member: If the railroads are only compelled to pay $50 for the eighteen head, and you pay $30 in addition on the two that are killed, the railroad company ought to induce every steer they could to get into a wreck, because they would have the difference between the $50 that they pay on the track and $30 that you pay, and the balance would be clear profit.

Mr. Brandt: Can you turn over cattle to the railroad that way?

A Member: We have never yet seen an animal that we had killed in a wreck. They sell them for you according to contract, and if you sign a contract to take $50 a head, all that they get over and above that is clear profit to the railroad company.

Mr. Brandt: You don't have to turn them over to the railroad company.

Mr. Cessna: Would this apply to feeders as well as fat cattle?

Mr. Brandt: It would apply on all kinds of cattle; we don't discriminate there. We ship from market to market on incoming or outgoing stock.

The President: I want to announce the Resolutions Committee:

RESOLUTIONS COMMITTEE:

J. R. Hughes, Mount Pleasant.
J. A. White, South Amana.
S. M. Corrie, Ida Grove.
Merritt Greene, Marshalltown.
W. J. Drennan, Corning.
J. H. Hanna, Vinton.
D. P. Hogan, Massena.
R. M. Gunn, Buckingham.
Fred Larrabee, Fort Dodge.
Ralph Sherman, Grinnell.
Henry Brady, Dallas Center.

Let us meet promptly at 1:30, because we have a heavy program.

Afternoon Session.

The President: Gentlemen, I take pleasure in introducing to you Captain W. H. A. Smith, who is an old sea captain, and he gave it up to feed cattle—for his health, I suppose. His subject is "Cattle Feeding for Profit."

Captain Smith: Gentlemen, I didn't give it up for my health; I gave it up to make money; and I am doing it!

CATTLE FEEDING FOR MONEY—NOT FOR GLORY.

BY CAPT. W. H. A. SMITH.

We were taught as children that all Gaul was divided into three parts. So is cattle feeding and cattle production. We have, first, the man who feeds for glory; second, the man who feeds for money; and third, the man who feeds for neither glory nor money. I am interested only in the second man. No man can make a success of any business unless he has a certain goal in view, and farming does not differ from any other business in this respect. My one idea all the time is to build up the farm. In feeding cattle, I do not figure on the $2.00 advance I hope to get, but on the four tons of extra silage and the one ton of extra alfalfa I am sure to get. For the larger the crops are, the smaller the margin necessary to enable me to market my crops at a profit—and this is my goal, economy of production.

I learned long ago that the sure profits from a farm were in utilizing the waste, and that cattle feeding was one way of doing this. We have, in my part of the country, dozens of men, smart commission men and cattle dealers, who have tried to feed cattle, arguing that they were better judges than the average farmer, that they could buy and sell their cattle cheaper; and yet they all, without exception, eventually peter out. Why? Because they figure on making a profit above the market price of grain, feed and labor, whereas, I figure on selling at the market price, and my extra profit comes in producing larger crops from the manure. If, therefore, you start out with this idea firmly worked out in your mind, the idea that you feed cattle not alone to make big gains, but to utilize the waste, success is bound to follow if you go at things in a business-like manner. But to utilize this waste, you must have an outfit or tools to work with.

There are some things that any farmer is justified in going in debt for. First, to make the farm hog and sheep tight; then get a silo, and, third, grow alfalfa or clover. These three things are absolutely essential in the economical production of beef, pork or mutton. Take the first, the fence. I had been for years very much dissatisfied with the dreadful waste of liquid manure through the rains, and the dreadful state of my feed yards in spring. Last spring we had lots of rain, and my cattle for weeks did not have a dry spot to lie down on, and as a result, they made miserable gains. I made up my mind then that a change was due. Why should cattle be confined in a small feed yard for six to eight months, and I have to haul out all the manure, with 50 per cent of it wasted through rain? How does it figure out on an interest basis? It takes around $250 to make a quarter section hog-tight; even allowing 12 per cent interest on the fence, this means $30 a year. Could I make that fence pay good interest? During the month of November, I had 250 head of two-year-old steers and 240 hogs, fed fodder on fifteen acres. On December 15th, I moved the cattle on another fifteen acres. These cattle are on feed and are fed their grain and oil meal in the feed yard in the morning; then turned out on the fifteen acres with fodder until 4 p. m., at which time they drift back to the feed yard, and find sheaf oats waiting for them in the racks. Sixty-seven pee-wee lambs left $110 for the waste they picked up. Twenty old brood sows have been living on the alfalfa and around the alfalfa stacks. Since September, 220 hogs cleaned up ten acres of corn, and cleaned up all the ground from which the silo had been filled. Did the fence around that quarter pay interest this year? Why, it will pay cost twice over. This is what the fence is doing in the fall and winter. What do you suppose it paid this summer, when the hogs ran on the alfalfa?

I spent twenty years of my life at sea, and had command of a ship for twelve years, and many a man asks me how on earth a man brought up at sea can take to farming; and yet, when you think of it, how much of my sea life is useful on the farm? In the days of sailing ships, we were out of sight of land for four months, and we had a certain allowance of provisions to last us the trip. No running around to the corner grocery if we ran short. We had to make ends meet, and so there was no guesswork. It taught us to use the scales. For weeks before we arrived off a port, I would figure for every possible emergency that might arise, for, although a large sailing vessel is all right in the open sea, she is a ticklish proposition in narrow waters. I would figure on being caught in a lee shore with a gale of wind, being becalmed, or head winds, and of dirty weather. I learned to figure before a thing happened, and not after. We learned at sea how to handle men. We figure a man hired for labor furnishes labor but not brains, and we do not make the mistake so many Iowa farmers make in thinking they can hire labor and brains for $30 a month. The boss must furnish the brains. We learned that it took 400 tons of coal to make a steamship go twenty miles an hour, but it took 600 tons of coal to make her go twenty-one. In other words, whenever you work under forced draft it costs too much money.

Now, the same principles will apply to cattle feeding, for whenever a man attempts to put two and a half or three pounds per day on a steer, he is working the steer under forced draft, and the last half pound of gain eats up all the profit. We have to get as far away from feeding for speculation and big gains. The one idea should be in feeding cattle to utilize what is now practically waste; to make beef from fodder straw, silage, common stacks, and simply add to these enough corn, clover, alfalfa or oil meal to make a balanced ration. This does not mean a big daily gain. Many of our agricultural papers are lamentably weak on the advice they give correspondents who write them on how to feed 1,000-pound steers. They invariably talk about feeding eighteen to twenty pounds of corn per day, and about two and a half to three pounds gain per day on a steer, entirely overlooking the fact that the class of men who write them for advice are mostly men who have never fed before, and that this class of men should not be advised to make beef from corn with a little hay roughness, but from roughness with a little corn or oil meal added, simply selling his crops and reducing his speculation; and, above all things, the cattle should be sold every time there is a profit, irrespective of whether they are fat or not.

Keep in front of you all the time the idea that you do not want to speculate. You want to sell your crop at a market price or better, and from the manure raise a little larger crop next season. Play the game as a business, and if you decide to do so, put a little study into it. This is an age of specialists, and although there is just as much money made in feeding common cattle, provided they are bought as common cattle, as there is in good cattle, you cannot do both. Take up one or the other, and stay by it; every year will add to your knowledge. Notice, I am talking about feeding common cattle, not about raising them.

There is a great deal of discussion at present as to whether it will pay to keep cows to raise calves on high-priced land, and I am not yet quite satisfied that it will pay to do so in quantities. But I know that there are thousands of farms in Iowa today on which two or three cows each could be kept from what is now absolute waste, and that with a good community bull calves would at fifteen months of age leave a handsome profit. All our good breeds of cattle today come from certain communities staying by certain cattle. This is the history of the Angus, Hereford, Jersey, etc. Here in Iowa at present, the types, breed and quality of cattle are, to say the least, mixed, and it stands to reason that if a certain type of cattle were raised in a certain locality, farmers would never lack for buyers.

Q. What weight of cattle do you prefer to start?

Captain Smith: You can't feed what you like. If you are going to feed cattle, as a general rule, you want to buy what the crowd doesn't want at the time you are buying. Two years ago the highest thing we had in this country was all big cattle. What happened? The next year we had all big cattle coming to Chicago, and this year nobody wants them; now they are all going the other way; they all want baby beef. You will have all kinds of baby beef and little cattle next year, and there will be big cattle wanted. It may not come that way, but that is the tendency, and you don't want to go with the crowd. When everybody is rushing in and buying cattle at 7 cents you want to stay out. I bought some cattle when the market cheapened; now they have come back again. When these spectacular advances come and they shoot away up, there is always a hereafter, and you don't want to be in it.

Q. When you are feeding two or three hundred head of cattle once a day, do you have one man feed?

Captain Smith: Yes. I have fed 365 calves in one year on 12 pounds of shelled corn and 6 pounds of alfalfa hay, and we never varied it. It all went in in one wagon. There were only 2,200 pounds of hay and 60 bushels of corn.

Q. Do you grind your corn?

Captain Smith: No, sir. I ground corn for five years, and it was never worth the expense of grinding. Provided you have hogs enough to clean up the waste, it will never pay you to grind.

Q. Do you feed silage?

Captain Smith: Yes, sir.

Q. Isn't twelve pounds of shelled corn to a calf a good feed?

Captain Smith: It is a good feed.

Q. How much oil meal in addition?

Captain Smith: One pound and a half.

Q. Don't you think the last would not get as much as the first?

Captain Smith: I don't know whether any of you are in the habit of watching cattle carefully, but if you do, you will notice they nearly always eat in the same place every day and at the same time; and if you have plenty of rack room these calves get in the habit of going to the same place all the time. If you have 365 calves, and the racks are empty in the morning, it stands to reason that the hungriest steers have got the most.

Q. As I understand it, you don't aim to feed a full feed of grain at one time, but you aim to give them all the roughage they will eat. I understood you to say the racks were empty. Is that because they have just enough, or are they hungry?

Captain Smith: If you watch your cattle carefully, if you feed them heavily, for two or three days they will eat abnormally, and then all of a sudden they will go off feed and they won't clean up the racks; but if you slowly increase your hay or ensilage every few days, you will get these calves up, and on 100 calves five bushels will make a difference, and you will see it. They have practically had their limit within a few bushels, and it is that odd few bushels that the steers gorge on. We never give a steer all the grain he will eat. I have 250 big steers and they are getting 11 pounds of corn. I feed all my oats in the sheaf; we never think of threshing.

The President: The next number on our program is Prof. W. H. Pew, the head of our Animal Husbandry Department at Ames, on "Modern Methods of Beef Production."

MODERN METHODS OF BEEF PRODUCTION.

BY W. H. PEW.

Professor of Animal Husbandry, Iowa State College.

Modern conditions demand modern methods. Not so many years ago, a farmer or feeder never thought of using his pencil and paper to figure his cost of gains on cattle or total profit or loss. The only records he had were in his check book stub.

SHORTAGE OF BEEF.

Much has been said and written concerning the shortage of beef, and we are compelled to believe that there is an actual beef shortage, the solution of which is one of the most important problems before our American people. The rapid increase in population, making a larger demand for beef, has caused higher prices.

On this account, many farmers have sold their breeding herds as well as the nominal increase of female stock, with the result that we are now facing more or less of a beef famine.

From as accurate data as is possible to secure, this shortage of beef is not limited to the United States and to our corn belt states, but it is the case in most of the world's beef producing countries. In none of the ten beef producing countries of the world except France and Australia, has the beef production kept pace with the increase in population during the past ten years. Neither one of these countries need be considered to a great extent in the world's beef supply. In the ten beef producing countries referred to, there has been, during the last ten or twelve years, an average increase in population of 19.9 per cent, and of cattle only 2.18 per cent.

SHORTAGE IN THE UNITED STATES.

Statistics show a decrease of nearly 60 per cent in the number of breeding beef cattle in the past twelve years in the cattle producing states west of the Missouri river, total beef cattle in the United States, numbering in 1900 nearly 50,500,000, have decreased to less than 36,000,000 in 1913, compared with the population of the country, which has increased nearly 20,000,000 in the same time. In other words, the population of the country has increased 25 per cent, while the number of beef cattle has decreased 30 per cent.

SHORTAGE IN IOWA.

Our own state has suffered proportional loss in the numbers of beef cattle. In 1900, the beef cattle in the state numbered 3,900,000, and the population 2,230,000. In 1912, the population was 2,224,000, and the beef cattle 2,773,000 showing a decrease of population of 1 per cent with a decrease in the number of beef cattle of some 30 per cent.

BEEF CATTLE CONDITIONS IN IOWA.

While the above statistics deal only slightly with the existing conditions in our own state as well as in our western states and also southern it is strong enough indication as to what must be done in order to remedy the shortage. We have seen during the past few weeks a slight decline in the market price of cattle. This, under existing conditions, might have been expected. However, we cannot but expect good prices to be maintained. Probably some weeks may find the market somewhat unsteady, but it is the firm belief of all men who study the market that the days of cheap beef are past. With the division of the range into smaller farms, the growing of larger acreage of grains in the west and south, a smaller supply of beef cattle from the former range states must be expected. If Iowa and other corn belt states are to remain beef producing states, the cattle must certainly be grown within their borders. While no doubt some feeder cattle will be purchased from adjoining southern and western states, this supply will be more or less limited. We will take for granted, then, that cattle must be grown on our farms. Such being the case, we must proceed to find the class of cattle which are most profitable, and also the age at which they must be sold. Land valuations have increased very rapidly, and indications are that they will increase for some time to come. The cost of labor is also increasing. Concentrated feed prices, as a rule, are also increasing.

BEEF PRODUCTION PROFITABLE IN THIS STATE.

We feel sure that the production of cattle in this state has always been a profitable operation; however, figures have not been gathered in sufficient quantities until two years ago, when the Iowa Beef Cattle Producers' Association, through its agent, gathered data from a number of cattle feeders. His figures showed that cattle were produced at a profit, and that men who were following along fairly scientific lines were very successful. Some few years ago, when land values were lower, cattle could be produced in this state and kept until they were three years of age, and then finished off at a profit. This management of cattle will not prove profitable today.

BABY BEEF PRODUCTION.

We have all heard and learned something concerning baby beef production. Our agricultural colleges and agricultural papers in the central west have been giving explanations of the methods involved, and we are now more sure that they were correct.

At the recent International, the supremacy of baby beeves was demonstrated for the second time by the load of sweepstakes cattle produced on the farms of Messrs. Escher & Ryan. This supremacy was duplicated by every load of yearling cattle that had been well cared for. It was interesting to see the sale prices of the various loads of cattle as compared with their weights. We have always known that younger cattle make more economical gains than the older cattle, although we have sometimes supposed that they did not gain quite so rapidly. This last supposition was disproved in a feeding operation carried on at the Walnut Ridge Farm at Whiting, Iowa, in 1912, where calves weighing 475 pounds made an average daily gain for 336 days of 1.97 pounds, as compared with a gain of 1.42 pounds for 259 days on two-year-old cattle weighing at the start 775 pounds. The gains in the case of the calves were as to be expected made on considerably less feed, which means that they were more economical. Cattle that can be marketed before they are eighteen months of age have therefore made the most economical gains and with proper care and feed have made the most money for their grower and feeder.

The International Live Stock Exposition has always stood as an educator for the beef cattleman. Some of the lessons they should have learned from the performance of the "baby beeves" might be summed up as follows: The finished yearling steer is, as mentioned above, the most profitable for the grower and feeder; second, that good blood is necessary for the greatest profit. A good steer can seldom be grown out of a poor calf; third, in order to be profitable a calf must be properly handled from birth; fourth, early maturing qualities are absolutely necessary for the best results.

For one to stand on the block and watch the yearling cattle sell, either prize winners or not, for prices from 2 to 3 cents per pound in advance of those brought by the heavier two and three-year-old cattle, was sufficient proof that some of the older cattle might be well left out of the exposition premium list. I believe it has been proposed that the class for three-year-old cattle be dropped. There seems to be a very good reason for this. I dare say that every pound of gain put on these heavier cattle was done at considerable loss, while on the other hand the gains made by the younger cattle were no doubt profitable. I know of some loads of yearling cattle that did not pass the inspection of the "sifting committee" which made gains for a period of nearly one year at a cost of 7½ to 8 cents per pound. Fairly accurate figures have been kept on their cost and gains.

If our expositions are to remain as educational as they have in the past, I am convinced of the fact that two-year-old cattle might well be left from the single steer prize list. No doubt some may argue that the steer herd would not look just right without the two-year-old, but I am looking at it strictly from the standpoint of an educational feature to the farmer and the breeder from the standpoint of profit. As perhaps most of you know, two-year-old steers may be at least thirty-five months of age at the time of the International and at no time during the state fair season could he be more than four months younger. This means that the two-year-old steer has been carried from the age of a junior yearling to a junior two-year-old. His most economical period of growth and gain was made up to the time he was a junior yearling. During the growth and gain of his two-year-old form he, in most cases, made his gains at a loss.

A year ago, I kept some figures on the two-year-old steer, John Bell, of which bred and raised on the college farm. This steer as a junior yearling was champion steer of the Short-horn breed at the 1911 International. He was as rapid a gaining steer from a junior yearling to a two-year-old as has ever been fed on the college farm, but even though he was his gains were very expensive and hence unprofitable.

I am quite convinced from the data that we have at hand that no steer should be exhibited in the single classes that was past the senior yearling class. This would mean then that no steer could be exhibited that was more than twenty-seven months of age.

"BABY BEEVES" MAKE ECONOMICAL GAINS.

Data taken from the Animal Husbandry Section of the Iowa Experiment Station shows that "baby beeves" made very economical gains.

Three groups of fourteen 385-pound calves, each fed for 203 days, from November 19, 1912, to June 10, 1913. (Figures based on home weights.)

Ration Fed	Corn and cob meal, cottonseed meal, clover hay, corn silage.	Corn and cob meal, cottonseed meal, clover hay.	Corn and cob meal, oil meal, clover hay.
Average daily gain	2.26	2.18	2.31
Average final weight	843	829	854
Average daily feed			
Corn and cob meal	11.66	13.40	13.70
Cottonseed meal	1.84	1.84	
Oil meal			1.84
Clover hay	2.03	2.05	2.04
Corn silage	5.16		
Feed for 100 pounds of gain -			
Corn and cob meal	517	613	594
Cottonseed meal	81	84	
Oil meal			79
Clover hay	90	94	89
Corn silage	229		
Cost of 100 pounds of gain	$5.64†	$6.46†	$6.23†

*Corn at 53c; C. S. meal, $30.00; oil meal, $30.00; clover, $12.00; and silage, $3.25.

†Profit returned by hogs for each 100 pounds gain on steers is respectively $0.69, $0.68, and $0.63, which may be credited.

The above data not only shows that the calves made economical gains but also that there are some methods of feeding which are more profitable than others. Corn silage seems to play a very prominent part in the reduction of the cost of gains of all classes of cattle. It proved so in this case. In feeding operations at this station, as well as others through the corn belt states, linseed meal seems to have an advantage over cottonseed meal for feeding calves while for older cattle most results show as good if not better results by the use of cottonseed meal. A ration for calves composed of corn, oil process linseed meal, clover or alfalfa hay and silage seems to be as satisfactory as any for making rapid as well as economical gains on calves. At the Illinois Station last year the addition of oats to the ration of corn and alfalfa seemed to increase the cost of gains. There is no doubt but what oats might play a very important part in the proper growth and development of young cattle for breeding purposes.

THE CARE OF THE BREEDING HERD.

If "baby beeves" are to be put onto the market at the earliest possible date they must have had their mother's milk up to weaning time. In order that this may be properly accomplished the mothers must have been properly fed and cared for. This is a big item in actual cost of production of the calf up to market time. Some men have figured that the cow can be maintained for the year on something like $20.00. If she has been maintained for this amount we will agree that she has been very economically kept. I would rather place the cost of her keep at $30.00 per year or slightly above, this to include all items in connection with the cost of her keep. By the use of corn silage and some roughage throughout the winter season the cost of maintenance of the cow may be considerably reduced below the cost of keeping her under ordinary conditions. By this I mean her maintenance on high priced hay and other feeds. At the college farm last year the cows were maintained throughout the winter time without grain on corn silage with a very small amount of other roughage. Some of these cows were suckling their own calves and some of them were dry. However, the cows that brought calves in the spring had strong ones as the crop of last spring shows. As a matter of fact all of the cows went through the winter in a very good condition at a cost very much less than had silage not been available. The same is being done again this winter. No producer of baby beef can do it entirely successful without the use of a silo or two.

MILK AND BEEF COMBINED.

A large number of men are selling cream from the cows and raising the calves on skimmed milk. Data is to be found which shows this to be a profitable operation, probably carried on at somewhat greater expense than the other method, but surely very profitable if carefully managed. Men who have herds of cows that have been bred up so that they are giving good quantities of milk can sell from these cows enough cream and at the same time raise large, strong, vigorous calves and make the operation very profitable. The only drawback to this is that the calves can hardly be marketed at quite so early an age as the ones that are permitted to nurse their own mothers. Proper substitutions of grain must be made for the calf receiving only skimmed milk. He no doubt will grow sufficiently rapid, but he can hardly be expected to fatten so rapidly. At the outset all calves, whether they be permitted to nurse their own mothers or whether they are to be grown on skimmed milk, must learn to eat grain at as early a date as possible. A setback during the early period of their growth means a delay in becoming ready for the market and hence less profit.

SILAGE AND ALFALFA ARE OF IMPORTANCE.

In the corn belt corn silage and alfalfa hay are the salvation of the beef cattle business. Up to this point I have not mentioned anything concerning the feeding of steers purchased from nearby markets or from the range. Cattle of this sort will no doubt be fed for many years to come. With this class of cattle, silage even plays a more important part than in the feeding of younger cattle. We have found in feeding operations, particularly on short-feds, say of 90 days, that larger, roomier two-year-old cattle will consume an immense amount of silage and smaller amounts of grain and make gains extremely economical. However, when feeding for a longer period it has been found that the amount of silage must be decreased and the grain increased in order that the cattle will become finished within a reasonable time. Silage seems to form too much bulk when fed in extremely large quantities during the latter part of the operation. Of course alfalfa hay makes a very valuable adjunct to silage for two-year-old cattle. It has been found that it must be fed somewhat sparingly to calves at least until they have been thoroughly accustomed to it. It has been proved time, time and again that for the most satisfactory results in feeding older cattle that some supplemental feed must be used. Probably the most important supplemental feeds are some form of cottonseed meal or cottonseed cake and linseed meal. The amounts to be fed will depend upon the time of the feeding operation and also the age of the cattle; usually, however, from 2½ to 3 pounds per day for each 1,000 pounds of live weight has been found to be the most satisfactory.

THE DUTY OF OUR IOWA FARMERS.

It is the farmers' duty to feed the people of the nation. This certainly must include meat supplies, one of the most important of which is beef. He must raise more cattle. Present indications are that the prices of beef cattle will be sufficiently high to make beef cattle raising profitable. Authorities tell us that strict grain farming robs the soil of its fertility. If beef production has any one thing to recommend it, it is its ability to conserve the soil fertility of the farm. There really is no more important problem for the farmer than the maintenance and building up of the soil fertility. Some of the factors which are necessary to insure success in the beef producing business are: First, the building of more silos and the utilizing of all of the roughage of the farm; second, more and better blue grass pastures. Many farmers underestimate the value of the pasture land. In some of the parts of the old country where live stock farming is the principal occupation, the pasture lands are valued more highly. Third, growing of more clover and alfalfa. Fourth, keeping the heifers and putting them into the breeding herd rather than selling them because of an advance in price on the market. For some time past heifers have been selling practically as high as steers if they were equally well finished. Fifth, by the use of better breeding stock. This is absolutely necessary if success is to be had. The grand champion steer at the recent International is an example of the influence of good blood. This steer, Glencarnock Victor II, twenty-six or twenty-seven months of age, had for a granddam an old red nurse cow, two crosses of pure bred Angus bulls, together with proper feeding, produced this wonderful steer. Really no better example of what good blood will do has ever been shown in the history of American show yards.

I believe that the question of baby beef production on the ordinary farms in this state is profitable. We are going to know next year just how profitable it is. The Animal Husbandry section of the Experiment Station has now the co-operation of one of the beef producing plants in this state in obtaining the cost of production, and that is something that nobody really seems to know at the present time. We hope to have figures at that time which will be of use and benefit to you,

Q. This year cottonseed is worth about $32 a ton in car lots laid down on the tracks ,and we have a rather good crop of clover through southeast Iowa. We have our silage to carry the cattle through, as also clover hay. Would it not be cheaper to increase the amount of clover hay to help balance the amount of produce and reduce the cottonseed, although it might make a more bulky feed?

Professor Pew: It might, although I believe that in order to get the best finish you must have cottonseed or linseed meal in about the proportions that I have mentioned. I think the figures will bear out about the proportion of cottonseed meal or linseed meal; that is, 2½ pounds for each thousand pounds of live steer, and then give what hay they will probably consume.

Q. Would you continue the silage up to the shipping point?

Professor Pew: Up to within twenty-four hours, and possibly a little later, depending to a certain extent upon the length of your shipment.

Q. In feeding once a day, what time would you feed?

Professor Pew: Not the first thing in the morning; it might go along until the beginning of the forenoon. That will depend to a certain extent upon what other work you have to do.

Q. Shall we give the corn with the silage?

Professor Pew: Not necessarily, although some do that. It depends upon the arrangement of your feed bunks.

A Member: I would not feed a steer in the morning; I would feed them in the evening. After a steer has been out all day, you feed him at night and he lies down. If I feed him in the morning, he won't go out into the pasture until after he has had his feed, then the dew is off the grass and he lies down.

CONDITIONS AS SEEN FROM THE MARKET.

The President: The next number is Mr. Chas. O. Robinson, member of the Clay, Robinson commission firm of Chicago, who will talk to us on "Conditions as Seen from the Market," or by the man at the market.

Mr. Robinson: Mr. President and Members of the Meat Producers' Association: I can assure you this is a very high honor to be asked to address you, and I came out rather under protest. I have the pleasure of having been born near Burlington, at Middletown, Iowa. I have not been in Des Moines for about fifteen years, and previous to that time it was twenty-five years more, which makes about forty. My father was in the cattle business in the eastern part of the state. He came out from Ohio in the early '50s, and in those days they rode horseback. He went back to Ohio later and married my mother. I have heard him say that it took two weeks to ride from Ohio to Burlington, Iowa, and they had to cross the river on a boat in those days.

Now, I have listened to the remarks of your worthy president, Mr. Brockway, Captain Smith and Professor Pew, and I want to say that I was very much impressed. If I lived in any part of Iowa, I don't care how far it was from Des Moines, I would join this association. I have had more or less experience with associations—first with the Texas Cattle Growers' Association, which is a strong body of men; later with the Miles City and the North Montana Roundup Association and this is the second time I have attended a cattle feeders' association. I feel that it is an honor to belong to an association of this kind. If a man has a protest, it is up to the officers or board of directors, and you can make any railroad sit up and take notice. But if one man should go, you might as well try to whistle out of the window; they wouldn't listen to you.

I was very much interested in Mr. Brockway's and Mr. Smith's papers about the feeding of calves and yearlings. Being on the market every day, I have had more or less experience. The trade is demanding young cattle—early maturity; you can't get away from it. As Professor Pew remarked, it was demonstrated at our last fat stock show. I stood in the ring and saw the grand champion yearling sell at $13.25, and two loads of yearlings and one load of Short-horns bought at the Denver show in January, sold at $11.40. There was a gentleman from Missouri who had four or five cattle. One load of Short-horns weighed 1,960 and sold at $8.80. He had another load at $8.50. Another load over 1,800 pounds at $8.60 he claimed had been fed eighteen months. Only two of all the buyers would buy those heavy cattle; they are out of style. On Saturday Tom Cross and myself took Walter Blumenthal, the president of the United Dressed Beef Company, out to lunch. He told me: "Tell your customers to make their money on short feeding." Of course, the most money I have ever seen made on feeding cattle was on short-fed cattle—cattle that had been fed ninety days. I remember once there were two men in Vermillion county, Illinois. One was a son of an old English friend of ours, and the other a friend of his. They came up to Chicago and we were going to carry them for 100 cattle. They both got drunk—this was fifteen years ago—and went to buying cheap cattle, so that one of the yard men told me if I didn't get them out of there they would buy all the cattle in the yards. So I got busy and wired a friend to see the young man's father and see if he would take them, and he said he would. They carried them along from November to January. Those cattle came back in April, May and June, and never stopped making money.

In regard to these heavy cattle, Mr. Blumenthal said they used to use these big hides for automobile tops, and the Ford people were the largest buyers of the big hides in the world; but somebody got busy and discovered something else to take their place in the shape of cloth, and they have got the tanners up in the air. It seems to me that will hurt the heavy cattle—the decrease in the demand for those hides. He spoke of the fat that comes out of these big bullocks, and that recently they had discovered a process of using this fat. They would take the oil out of it, and the other they would call stearine, and put cottonseed oil with it and make what they call lard. It comes in competition with lard. Since the tariff came off they are shipping this stuff in free every place, and that is hurting that trade. I don't want to get into politics, because I don't mix in either politics or religion, but I was telling what this man told us at this lunch.

I was very much impressed with Captain Smith's remarks about the low cost of producing his cattle. We had the pleasure of having his two cars of yearlings at the International last year, and they made a record, but I didn't know that he was able to produce all that beef for so little cost. I think it would pay you gentlemen to get his secret. I know everybody here wants to do the best he can.

Before I left Chicago I looked over our records to see what the cattle receipts were in 1877, the year I went to the yards, and I will give you some of the figures. In 1877 we had an average for six days in the week, barring Sunday, of 3,308 cattle; last year it averaged 10,088—over 300 per cent increase. I was sent to the Council Bluffs yards before they were transferred across the river to Omaha and stayed there one summer with my father. In 1883 the receipts at Chicago were 1,919,167, and in 1884 1,870,050. The Omaha yards were started that year and had 88,603. The Denver yards were started in 1886, and they had 54,229 head. So we have a total for the three markets, Chicago, Omaha and Denver, for the years 1884 and 1886 of 2,012,000. I want to show how the receipts have increased in Chicago in the face of these outside markets. In 1877 Chicago had 4,000,000 hogs; last year we had 7,000,000. In 1877 Chicago had 310,000 sheep; last year we had 6,000,000.

I think no state has contributed to the markets like Iowa; you have kept us filled up there in Chicago; and while you were doing that you were contributing to St. Paul, Sioux City, Omaha and St. Joseph.

I want to ask Professor Pew if the cattle fed at Iowa State College were fed at a profit.

Professor Pew: I think all two-year-old cattle are fed at a loss. Our yearling cattle have been making gains at a profit.

ADDRESS BY HENRY WALLACE.

The President: I want to say concerning our next number on the program that the speaker is one of the men in this state whom we all love. We have been interested in him, as well as he in us, for a great many years. We have listened to him orally, and we have read and analyzed and digested his editorials for a great many years. He is a man whom I suppose, without reflecting any on the speakers who have preceded him, we would all go farther to hear than any other man who could talk to us. That man is Uncle Henry Wallace, editor of Wallaces' Farmer.

Mr. Chairman: The greatest trouble I have in life is to keep people from thinking that I know more than I do. I suppose the universal experience is that when a man is young he is not properly appreciated. It is a great misfortune for a man to get more reputation than he really deserves.

I am not going to discuss the technical questions that you have been discussing. I have never in an afternoon—except in church—heard as much good, sound sense as I have heard this afternoon from practical men who know what they are talking about. I was very much interested in Captain Smith's address, and I suppose the more so because many of the points he brought up are things that I have been teaching for a good many years. We have been feeding our cattle too much grain; we have been throwing it away in trying to make rapid gains—of course at a loss. We have to learn to do what the Englishman and the Scotchman and Irishman do—fatten our cattle more out of the rack and the silo than with a scoop shovel. Another thing we will have to learn is to save waste. We are the biggest robbers on the face of the earth, and it does not become you farmers to find fault with the lumber fiends that have robbed our lands of the lumber, or the coal men who are wasting their material in mining. I believe the manure production—the dung production—I like that English word—is of more value than the output of all the coal mines of the state. I am not sure but what it is of more value than the iron mines and the output of the steel trust. The secretary of our state board of agriculture, Mr. Corey, I think will have some figures on that subject pretty soon that will surprise you. The worst waste is the waste of our soil fertility. You are not growing any more grain today on land worth $150 an acre than you did when it was worth $50. Our present system of renting is wasting our fertility. It is to the interest of the land owner to have his land increase in value, but as a rule the renter is trying to get all he can out of it—to loot and rob it, and then say, "After me the deluge."

You ask what has that to do with the cattle business. Everything, gentlemen. Unless we maintain the fertility of the soil, we can't go on feeding cattle, and they will be fed in the Argentine and in Australia. So long as corn is worth within from 18 to 20 cents of the price of wheat, just that long men will grow corn, and just that long you will see our lands going down in fertility. The landlord says there is more money in corn outside the steer than there is inside, and so he says to the tenant: "You must grow corn; not a cent for buildings." Our cities are growing and they will keep on doing so gradually, although not so fast as they have in the past, because the lure of the city, its lights, its paved streets, its jollity, will bring new people into it from the country. Our immigration goes mostly to the cities. Every year the area given over to the special purpose cow for dairy purposes is increasing. It takes all of New England and New York and part of Canada to supply the milk for New York, Boston and Philadelphia. It takes a large part of the state of Illinois to furnish milk for Chicago; another large slice for St. Louis. And so the beef steer is being shoved back—and back—and back. The short grass country that can be used for grazing purposes is decreasing, and hence we are to have less and less cattle from the range and the ranch as the years go on. There are just enough nesters and dry farmers scattered over that country to spoil it for anything else—and they spoil themselves generally in an attempt to do that. By and by we will have a sensible plan; cut that country up into large tracts of three or six sections or a township, and then grow alfalfa, and then you will fatten your steers out there and you won't get them for baby beef.

The next question is, where are you going to raise your cattle? I have had a good many men—some of the professors of our colleges—try to explain to me that a man can get rich (12½ per cent, I believe, on $200 an acre land) by buying a lot of Short-horn cows of the common sort, and a first-class Polled Angus bull, and let them run the machine, while he sits on the porch and watches the calves sucking the cows. You know that you can't keep a cow a year and raise the calf to weaning for less than about $35 a head. How is this to be remedied on land worth $150 an acre? We can help that, not in a big wholesale way, as Mr. Smith says, but by limiting our cows to about $10.50 (if we let the calves run to them maybe $20 at the outside), and by so improving our pastures that it takes less than two acres of grass to keep a cow during the summer time, and the rent of another two acres to keep her through the winter, more or less. You must learn to grow grass, and hardly anybody knows anything about that now.

I was surprised when I was over in England this summer with Secretary Wilson to find at a conference of some of the leading men of Scotland that it cost $50 an acre to put down a permanent pasture. I didn't believe it, but on talking with about a dozen directors of the Highland Agricultural Society there was only one man who put it less than that. How do they do it? In the first place, they wasted their virgin fertility, just as we are wasting it now; and they never learned how to farm until they did waste it. Now they take a year to cultivate the land and clean it, and then they fertilize it, and they sow 47½ pounds of grass seed per acre, and they don't expect to turn it up for the next twenty years. A tenant who would undertake to plow up one of those permanent pastures would get into the same trouble that he would if he took the house off or set fire to it. They are doing at that large expense what some of us did at little expense. You all know that where there is a field in Iowa or Illinois that is raw prairie—good rich land that grows bluestem—and a man who had sense enough to sow blue grass on it and pasture it close and let it stand for ten years, he has a pasture that will put fat on the steers; and if he plows it up it will take him fifteen years more to get back something like the fertility there was there. A pasture of that kind is proof against drouth, frost and flood, and there is something in the substance of that grass. It will keep a cow in the pasture for a year without rain. We must learn to grow grass, so that an acre will keep a thousand-pound cow seven or eight months in the year. I have done it myself on small acreage, and it can be done. Then you will decrease the cost of raising your baby beef.

There are three grades of land in Iowa; one that will keep a cow to the acre and fatten her without grain. The second is the kind that will grow a stocker to the acre; and the third land that will grow a donkey to the acre. We can never have the pasture land that they have in Scotland, because we haven't the even distribution of rainfall; but we can, if we will at once put our minds to cultivating grass, double the yield of our pastures, and when we do that we can laugh at the world when it comes to the production of beef.

The root of the trouble, to which I have referred before, is our system of renting land. We are simply playing leapfrog over the state of Iowa. There is hardly a man of you but would sell your farm if you were offered your price. With the most of you it is not a home; it is for sale. We have a great speculative mania in land, and as long as we think there is some place better in Iowa we will never get down to real business in this state. But when you conclude that there is no place better or as good (unless it might be Kansas, if you take Colburn's story for it, where you get sunbeams out of cucumbers), and settle down and say that your place is not for sale, and won't be by your children or grandchildren, and go to growing grass and reading Wallaces' Farmer, studying night and day how to get all there is in the manure, how to grow your cattle on roughage as far as possible, how to save your waste, then we will do business. But we have got to get down to the point that when you rent a farm you give a man an inducement to be a good farmer, and give him to understand—by law, if possible, as they do in England—that he has a right to whatever he puts into that land. The English theory of renting is that the land and all that is in it and on it belongs to the man who put it there. Thus the tenant has no interest in going away or looking for another farm, and the landlord doesn't want to dispense with that tenant. So they stay from year to year and from generation to generation.

As to the kind of cattle to feed, I think Mr. Smith looks at it exactly right. Feed the stuff that the other fellow doesn't want. My father gave me a lesson in political economy when I was very young: Whenever everybody wants to buy, you sell; when everybody wants to sell, you buy. We have a great demand for baby beef, and the reasons given by the gentlemen here are all right and sound. It may be different next year, but your experience has been that the market wanted just what you didn't have, and the reason was because you have been wanting to have what the other fellow wanted to have, and you glutted the market.

So let us in the first place be satisfied to live in Iowa. It is God's country; it is the Mesopotamia of the new world. It is the one place where the Lord did His best. Let us do our best to make this the best country, with more good cattle, more good dual purpose cows, and more good people, than any other state in the Union. In that case we will all be happy.

The President: I wish to say in connection with what Uncle Henry said concerning the going out of the feeding business that in my work in the organization as president I have had some experience along that line. I know what it is to go into communities and have the leading corn belt men tell me that the boys have nearly all quit feeding cattle, and they don't know what the situation will be in regard to getting more members into the association. That is just about as sad a thing as a man can have put up to him. A lot of people in this state think that this is a feeder's organization, and that nobody is entitled to membership in it unless he is a cattle feeder. We have tried to convince them in the past few years that farmers are eligible to membership if they don't feed cattle, and have succeeded in inducing a good many such farmers to join our association. But I just wanted to drop that word for your benefit, that there has been a wonderful decline in the state of Iowa in the last ten years, since this organization was formed, in the feeding business. I find in going over the state communities where we used to have large organizations of men who were practically all cattle feeders, that they have nearly all quit and gone to raising corn, because they could make more money out of it, or at least they thought they could—and possibly they do for the time being. If we are going to conserve the fertility of these Iowa farms and hand them over to our children and grandchildren in as good condition as we received them, we must stay in the stock business, even if it doesn't mean quite as much ready money to use right at the time, and at the same time remain in the Corn Belt Meat Producers' Association, for the two go hand in hand.

Jerome Smith: That is all right, and I wish I could see it so; I am trying to. I settled on a farm forty-one years ago, but how can I expect my children to stay there? The best lot of men in the world are right here, and nine out of ten men in the cattle business say they are losing money. I have fed cattle—more often less than more—and have managed to get enough to live on, but haven't accumulated any great amount. I suppose that I ought to be satisfied to keep fixing that land, and let my neighbors raise their 60-cent corn and get the money, while I am just making a farm for future generations. Of course I am going to do that; I am the only man in our country who hasn't a farm for sale; but at the same time it is costing me too much. The last remark Professor Pew made was that he lost money feeding cattle. The man who fed a large amount made some money. I would like to know where our children are going to get off at if we are going to farm at a loss until we learn some other way. We have been coming here for ten years learning how to do farming and sell at a profit, but now Uncle Henry says that we can't farm at a profit until we learn different methods. I have been reading Wallaces' Farmer, but that doesn't come out quite so square as he did.

Mr. Fowler: I don't want to take up your time, but I expect I have studied this proposition for the past twenty years as much as any man in the state. You gentlemen have the greatest opportunity to produce of any gentlemen in a given territory on the face of the earth; all you have to do is to get after the job as near right as you can. There is an opportunity for this state to make fifty million dollars more per annum than now and not do nearly as much work. Captain Smith says that by a combination of grass and grain he is able to effect a wonderful saving in the production of beef. A hog is just as much a grazing animal as the steer, and there is just as great or greater opportunity to save on him as there is on the steer. And what is the greatest hindrance to that? It is over-estimating the value of the skim milk. I wrote some poetry that they tell me is worth a million dollars. A man from Kansas told me he saw it in the Kansas City Star, and he bought three car loads of hogs and fed them on pasture, and he said it was the easiest money he ever owned. If you can stand for the poetry you will get it:

The hogs were in the barnyard,
  Ready for their feed;
The schemer says, "Skim milk and corn
  Will meet their every need."
I said to him: "You surely teach
  The stunt you're hired to do;
But, dear sir, this big income
  I need as well as you."

So onto the pasture I turned the hogs,
  And with a little corn
There I made the cheapest pork
  I've had since I was born.
Since I have quit so much hard work,
  The work that suits me best
Is to throw a little corn on grass;
  The pigs will do the rest.

The convention thereupon adjourned to 9:30 a. m. Thursday.

THURSDAY, DECEMBER 11.

MORNING SESSION.

President Sykes presiding.

D. P. Hogan, of Massena, read the following paper on "Farm Credits":

FARM CREDITS.

BY D. P. HOGAN.

According to the best estimates I have been able to obtain, there is about one billion dollars loaned on farm mortgages in the state of Iowa. A saving of ¼ of 1 per cent in the interest rate on these mortgages would make the farmers of Iowa $2,500,000 annually; a saving of ½ of 1 per cent would make them $5,000,000, and a saving of 1 per cent would amount to $10,000,000 annually. The subject upon which I talk to you today is certainly an important one.

In order to borrow money at the cheapest rate and on the best terms, the security of the borrower must possess three principal elements:

First. The security must be first-class. That is, it must be founded on productive property of stable value, with a good margin of value above the loan.

Second. It must be a standard security, well known and well established. The investing public must know without question and without investigation that it is gilt edged. It must be a public fact.

Third. The evidence of the debt must be easily transferred in case of sale; easily negotiable; liquid. Hence it must be a bond.

Look over the list and you will find every security that sells high at a low rate of interest meets these three requirements. Government, railroads, industrial corporations, public service corporations, municipalities and even owners of large city buildings market their securities in the form of bonds. If their securities meet the first two requirements; if they are founded on property of substantial value and are first class and are widely known to the investing public, they invariably obtain a low interest rate.

An Iowa farm mortgage at one-half the value of the land, possesses the first requirement. The security is absolutely first class. There is no question about that. It is generally recognized that there is no better security than an Iowa farm loan. Its security is the earth itself, the source of all wealth. An individual farm loan, however, does not meet the second requirement. It is not a standard security. The investor is not safe in purchasing it without careful investigation. He must examine the title papers, or rather hire a lawyer whom he knows and has confidence in, to examine them for him. He must look up the values of the land which is no easy matter. It may be far distant from the investor's home. Many elements go to make up the value of land which may only be known to someone who is familiar with farms where the land is located. It can plainly be seen that individual farm loans can never find ready sale among the investing public. Neither does the farm loan meet the third requirement. It is not easily transferred in case of sale. In order to transfer it, it must be assigned before a notary public and the assignment recorded in the county in which the land is situated. The abstract should be continued also to insure that there was not a previous assignment recorded.

GERMAN METHOD.

The Germans under Frederic the Great, about 150 years ago, devised a method of handling farm loans whereby the security can be marketed in a form to meet the requirements I have enumerated. The method has worked so well that it is not only almost exclusively used in Germany in borrowing money on land but the other European countries have adopted it with some variations. Practically all of the land mortgages in France are now made according to this method. Other continental countries use it very extensively. Two general types of institutions have been developed in Europe in thus handling land mortgages. Both perform the same functions and differ only in this respect. One type is a non-profit seeking co-operative institution called a landschaft, and the other is a capitalized corporation that pays dividends. Different institutions under each type vary in regard to details, but the fundamental principles of all three are the same. I will first describe the type that is known best as the German landschaft.

A LANDSCHAFT.

A landschaft is a co-operative association of landowners, for the purpose of procuring loans for its members by the issue of bonds secured by mortgages on their land. The landschaft issues bonds against the collective mortgages of its members. The total amount of bonds outsanding must always be equal to the total amount of mortgages due the association, except that the accumulated surplus of the association may be loaned. There are twenty-three of these associations in Germany, each confining its operations to the province in which it is located. They are non-profit-seeking associations and, except in two instances, possess no share capital. They are subject to state supervision through a royal commissioner, and their articles of association require the sanction of the crown or the minister of agriculture. Landowners living within the area of the association and fulfilling the conditions of its articles, may not be refused loans.

Loans are not made in cash, but in bonds of the association. These bonds may be cashed independently by the borrower, or he may take them to a bank which is affiliated with the association, which will sell them in his behalf or advance him money on them as security. Loans are limited by some associations to one-half, and by some to two-thirds of the cash value of the land. They are usually made on the amortization plan; that is, the principal is reduced each year by the payment of not less than ½ of 1 per cent of the principal in addition to the interest rate.

Loans may not be called except when the property deteriorates by reason of bad farming or the borrower fails to keep up his payments or otherwise violates the terms of his obligation. The borrower has the privilege of paying any part or all of the principal at his option by giving notice. If he pays before due, he must pay in bonds of the same kind as he received when he obtained the loan. If such bonds are then above par, it costs him more to pay his loan, if below par, less. When part of the loan is paid, bonds to the same amount are, of course, cancelled.

PRACTICAL WORKING.

In order to illustrate the workings of the landschaft, I will say that a man whom I will call "A" desires to borrow $5,000 on his farm that is worth $10,000, and that another man whom I will call "B" has $5,000 which he wishes to loan on such security. Now, as you know, the ordinary method is for "A" to find "B" or the agent of "B" to obtain the loan. According to the methods prevailing here now, the loan would be made for five years with an optional payment clause, perhaps. Experience teaches us that the average life of a farm loan is much longer than five years and with the present high price and advancing price of land, the life of the loan will continue to lengthen. So at the end of five years, "A" will be obliged to renew the loan with "B" if "B" wishes to renew it or else seek a new loan elsewhere. In either case, he has the commissions to pay and if a new loan, additional abstract fees.

With the landschafts "A" would make his application to the proper officers, who would ascertain the value of his land and examine his title papers. In Germany, the land is carefully valued according to the income it produces for taxation purposes every few years. In addition, however, the land on which the loan is desired is valued by three members of the landschafts, who know the land and what its annual production is. If any further doubt exists that the land is of sufficient value for security of the loan desired, one of the head officers of the landschafts investigates the land also.

If the land is of sufficient value, the application is approved, "A" executes and delivers to the landschaft his first mortgage on the land for $5,000 bearing interest, let us say, at the rate of 5 per cent and receiving therefor bonds of the landschaft for $5,000 bearing interest at the rate of 4 per cent. Note the difference in the rate. The bond bears 4 per cent while "A's" mortgage bears 5 per cent, the difference being 1 per cent.

This 1 per cent, except a small part set aside to pay expenses and for surplus, is placed in a sinking fund, to be used to buy bonds of the association for "A's" benefit, virtually cancelling that much of his indebtedness annually. "A" still continues to pay at the rate of 5 per cent on his mortgage, even though the principal is annually reduced. You will readily see that a smaller part of the payment each year is required to pay his interest, so a greater part of it is paid on his principal. If "A" never pays more than the 5 per cent annually called for in the mortgage, his debt will in the course of time be extinguished.

I have said in this example that a small part of the 1 per cent is laid aside for the payment of expenses, and so forth. In most of the landschaften, this item is not over one-tenth per cent and in the older associations nothing is kept for that purpose, as the interest on the large accumulated surplus more than pays all expenses.

READY SALE FOR THE BONDS.

There is a ready sale for the bonds and they are quoted daily in the principal bourses of the states in which they are issued. They are legal investments for trustee funds and savings banks. In Germany, the law says that widows' and orphans' funds may be only invested in government bonds and land bonds. For a long period of years, landschaft bonds have maintained a market price very nearly as high as Imperial government bonds and at about the same price as provincial bonds. They are higher than industrial bonds bearing the same rate of interest.

The rates of interest of course conform to general market conditions for money. At the end of the thirties, 3½ per cent bonds predominated. Later there was an upward tendency, which culminated in the seventies in an issue of 5 per cent bonds, but these together with those of 4½ per cent were not long in circulation. Until the middle of the eighties, 4 per cent bonds predominated; their place was taken by those of 3½ per cent, and at about 1895, 3½ per cent bonds were largely in circulation. In 1897, only about 3 per cent of the bonds in circulation were of 4 per cent or over. Since that time there has been a slow but almost constant rise in rates. The average interest borne by all bonds of these institutions in 1900 was 3.42 per cent and in 1909, 3.49 per cent.

I have no amortization tables of the landschaft but have one of the Credit Foncier of France, which is similar. According to this table, at an interest rate of 4.3 per cent on the bonds payable semi-annually, a rate of about 7½ per cent on the mortgage will retire the loan in twenty years; a little more than 6 per cent on the mortgage will retire the loan in thirty years; about 5½ per cent will retire the loan in forty years; 4.88 per cent in fifty years and 4.66 per cent in sixty years. These figures will no doubt surprise you as they did me.

Thus you see, the farmers of Germany have a simple, reliable and inexpensive means of obtaining credit on their lands. The objection cannot be made that it is new and untried. It has worked successfully for about 150 years and has never lost a dollar to its bondholders as far as I could learn. Even in times of political calamity such as the Napoleonic wars, when government bonds were greatly depreciated, the landschaft bonds maintained a high value because their security was the earth itself, which wars cannot destroy. Panics, changes of government and severe agricultural depressions have not shaken the confidence of the bondholders.

SAME IN OTHER COUNTRIES.

Austria, Hungary, Denmark, Russia, Switzerland and Roumania have adopted the landschaft system with variations, and it has been extensively used in those countries to supply agriculture with cheap capital. The celebrated Credit Foncier was established in France in 1852, following many of the methods of the German landschaft. It is a semi-public institution. Its governor and part of its directors are appointed for life by the president of the republic. It practically enjoys a monopoly of the real estate loan business of France. Its rates are extremely low, as its bonds are held largely by small investors and the French are the most thrifty people in the world. It operates on the same long term amortization plan as the landschaft and loans on city property also. Its present capital is $40,000,000. A borrower can not obligate himself to pay a greater annuity than the total annual income of the mortgaged property, while on the other hand, the society is not allowed to charge borrowers more than six-tenths per cent over the rate which it obtains money on its debentures at the time the loan is made.

There are also in Germany a number of institutions that loan on real estate mortgages as a part of their business, whose liabilities are guaranteed by the state, province or district that established them, but I will not take the time to describe them.

FARM MORTGAGE BANKS.

There are, however, thirty-seven joint stock mortgage banks that operate in Germany under the imperial mortgage bank act of 1899, that deserve close study. They loan on both city and country real estate and their business has attained an enormous development. In 1880 their total loans were less than $400,000,000, while at the present time they total about three billion dollars.

The loans of those banks on rural property are small, only about 6 per cent in 1911. The greater part of their loans is on city real estate. This is probably accounted for from the fact that the landschaften covered the farm loan field pretty thoroughly before the joint stock mortgage banks were introduced. These banks may loan on either the amortized plan or the fixed term plan, except that one-half of the total rural loans in effect must be amortized. They issue bonds against the collective loans same as the landschaft. They operate under strict government supervision down to the minutest detail.

A joint stock mortgage bank shall not issue bonds to exceed fifteen times its paid up capital. A government auditor attached to each bank certifies on each mortgage bond before its issue that the necessary cover is existent and that it has been duly recorded in the mortgage register. The law states specifically how this mortgage shall be kept. The government officer may compare at any time any mortgage as shown by the mortgage register of the bank with the records of the land title office. As a matter of fact, the government auditor is custodian of all the securities for which bonds are issued. Penalties of fine and imprisonment are provided for any infraction of the law. Loans are usually made in cash instead of bonds, by these mortgage banks, as the landschaften make their loans. These joint stock mortgage banks and the Credit Foncier of France belong to the capitalized incorporated type and pay dividends on their stock.

IOWA FARMER NEEDS IT.

The Iowa farmer should adopt modern methods in marketing his farm loans. He must do as governments, railroad companies, industrial corporations and municipalities do; put the security in a form to suit the investing public. For the last 100 years, German farm bonds have been marketed at the same rate as provincial and state bonds, almost as high as imperial government bonds. Iowa state bonds have been sold at par at 4 per cent. Northwestern, Pennsylvania and other 4 per cent railroad stocks have been sold at par. So have U. S. Steel stocks. What German landowners have been able to do for a century, Iowa landowners can do. Do not be misled by misinformed persons who may say that conditions are not so good here that such mortgage system would not work in Iowa. I think that conditions for the successful operation of this system are beter than in Europe. There is no place in the world where a farmer can pay off his mortgage or pay for his farm quicker than he can in Iowa. It is true there are many farm loan companies now operating in the United States that issue bonds covered by mortgages. Their bonds have not become standard, have not commanded a low rate of interest because they have not observed one of the fundamental features of the German and other European institutions, strict government supervision and control.

By this method, bonds can be issued in denominations to suit large and small investors. The small investor should not be overlooked, for there are so many of them that their individual small holdings aggregate immense sums. Everybody has confidence in land as security. The average investor has not the time nor the ability to look up the value of the security in an additional farm mortgage that is offered for sale. He likes a high grade bond. Such a bond is supplied by the landschaften and mortgage banks of Europe. The government sees that the mortgage is taken with care and every safeguard surrounds the issue of the bonds. If the holder needs the money, he can sell his bond, as it has a market value every day in the year.

LONG TIME LOANS.

The loans according to this system are made for a long term if desired. As the average loan is not paid at the end of the five year term at which our farm loans are now paid, the renewal charges must be added to the interest rate to determine the cost interest. The assurance that the interest rate will not be raised during the time the borrower needs the money is an additional advantage. The payment by the borrower of at least a small percentage of the principal annually adds to the security of the loan.

Our farmers have had for some time an easy game. They have had land at little cost and stored with fertility since Adam's time, while their competitors in Europe were farming high priced land, with the constant burden of maintaining its fertility. But the game is evening up. It takes a lot of capital now to buy a farm. It takes a whole lot more to stock it and equip it. It takes a great deal longer time to pay for it than it did. It is about time to quit robbing it, too. It will be necessary to put dollars back into it every year in manures and fertilizers. We can't continue to get big revenues by putting corn into it every year. We have got to keep more of it in grass. Labor costs more than it did. No; we haven't such a big advantage now over our European competitor, and it isn't going to get any better. Perhaps we hadn't better underrate him any more. He is raising a great deal more wheat, oats and hay to the acre than we are. At any rate it will do no harm to look over the fence, or across the pond rather, and see if the Dutchman or the Frenchman has any edge over us in his methods. Then again, if there is a better way, we ought to adopt it anyway. We don't need to be farmers to be interested in their prosperity. Almost every dollar that comes into Iowa is the product of an Iowa farm and it is some of those same dollars that build our cities and turn the wheels of our industries.

GOVERNMENT SUPERVISION.

Some men will say that we don't want to find easier ways for the farmer to get into debt; that the farmer should get out of debt and stay out; that debt is a bad thing. Did you ever think that there are a whole lot of pretty good fellows that didn't inherit a farm, and the only way they will ever get farms is to go in debt for them? Those are the fellows that I am interested in. I want to make it easier for them to buy farms and make homes for themselves and their families.

Is there any good reason why a long term land mortgage system cannot be adopted in Iowa? What better security can anyone want than a bond secured by Iowa farms at one-half their value with the principal reduced annually by the payment of at least a small percentage. The strictest laws and government supervision is just as necessary here as it is in Europe. No government subsidy is necessary or desirable. It might be a good idea to have the mortgages deposited with the state auditor, the same as life insurance company securities are now deposited. The auditor should certify on each bond that mortgages to cover the bond are held by him. I see no reason why Iowa landowners should not be allowed to syndicate their borrowings under state laws. I think the securities offered under this system, which would be of unquestionable value, would meet with public favor.

Mr. Drury: How could a young man buy eighty acres of land costing $150 an acre? He has to give good capital to start with. He has to have a still larger loan to own an Iowa farm.

Mr. Hogan: You are striking at a subject that is a very important one, and is something that this does not solve, except that it gives the farmer cheaper money. You people on your farms, as I take it, are just like the directors of a railroad company. If there is a better method of marketing your farm loans you are foolish in not doing it, just the same as the directors of a railroad company would be foolish in not marketing their bonds in a better way, if the public wanted them that way. My idea in regard to that matter was that in order to establish this system in the first place we have got to make it absolutely safe, without any question, in order to sell the bonds. My opinion is that one-half the value would be as far as we ought to go at the present time. In Germany and other European countries they loan two-thirds of the value on farms and have no trouble. If the land is not taken care of, they have a right to foreclose it, but there is not very much question about that. You see the annual payment of one-half of one per cent on the principal cuts it down, and would cover any depreciation any way.

Q. Wouldn't this assist the speculator instead of the farmer, who needs it?

Mr. Hogan: You don't mean that it would not help the farmer, but that it would help the speculator also?

Member: It would help the speculator more than the farmer. It would be my idea that the farmer and the man who works on the farm should have the benefit of that, and the speculator go somewhere else.

Mr. Hogan: It would be a good idea, but it would be hard to regulate by law.

Mr. Oliva: In the matter of these farm titles, did you investigate the methods which they had in the foreign countries as to what constituted a good title? You will agree with me that in this state we have a very poor system of arriving at what constitutes a good title on a farm.

Mr. Hogan: I asked that question repeatedly in Germany, and they said that the land titles were good because the state was behind them. You know in a foreign country it is a little harder to get information on a subject than it is here. We found it pretty generally true that you can't get a direct answer to a question as you can in this country, but I think they have something like the Torrens system of titles. That system is optional in Illinois. In Canada they use it entirely, and in some states of the Union. If you put your land under it you go through a certain process, and after that you don't need any abstract. You can't put an instrument on record unless it is correct and perfect in every respect, and the certificate that you hold shows your title, with what encumbrance there is. If you want to obtain a mortgage on your farm, you take your certificate to the recorder's office and put the mortgage on record and a new instrument is issued to you showing your title subject to this mortgage.

Mr. Oliva: You will agree with me that under our statute ten years bars a great many of these defects in the title; and yet if I sell my neighbor a farm, he will take my abstract to an attorney and he will find all kinds of objections back thirty or fifty years. I have had experience in that, and we have had cases right in our own town where the best of abstract examiners have turned down their own abstracts. They acted on it one year, and two years after that the farm sold again, and they said the title wasn't good after they approved it before. There is a big graft there; you will all admit that.

Mr. Gregory: Do you think we could handle this any other way except through the Torrens system?

Mr. Hogan: Our titles are considered good at the present time. This is not a government institution in any way; it is no more a government bank than one of the state banks in the state of Iowa is a government bank.

Henry Wallace: Will you kindly explain to this convention, assuming they are all farmers who want to get this cheap money, how they have to go about getting it?

Mr. Hogan: I am advocating what are called in Germany the joint stock landschaft and in France the Credit Foncier. My idea is for a law to be passed authorizing the incorporation of state mortgage debentures, not much different from the loan and trust companies at the present time. The only provision would be that they would take the mortgages, and the entire transaction would be under close government supervision. They should only loan up to a certain value of the farm, and the mortgages should be kept with the Auditor of State or some state official. No more bonds could be issued than the value of the mortgages held and the capital of the institution. I would have the capital large. I would not have them issue bonds for more than 25 per cent of the capital. There would be no individual liability at all. There is a mistake a great many people make. They think this is a government institution. The Credit Foncier of France, which is an incorporated capitalized institution, has no liability of the mortgagor. You couldn't introduce a system like that in Iowa, where there would be a responsibility over and above the amount of the mortgage, while in Germany they are never called upon to pay anything above that.

Henry Wallace: Are the stockholders not liable for anything above their stock in this Credit Foncier?

Mr. Hogan: No, the stock is large. The owner of bank stock in this country is liable, and I think the owners of capital stock would be liable.

Mr. Wallace: But unless you increase the credit you are not going to get any decrease in interest, and the interest rises and falls inversely in proportion to credits. Unless you have this unlimited liability you are not going to have unlimited credit.

Mr. Hogan: Will any man here say that the value of Iowa land is less stable than the value of the property of the Northwestern Railroad Company? The value of the security is of course the fundamental thing in regulating the price of interest, but in this case the value of the property is unquestioned; there is no better security than Iowa land.

J. R. Doran: Will you state which of the systems you have described has the best rate of interest?

Mr. Hogan: The landschaft gets the best rate of interest. We found it something like 4 per cent. Under the Credit Foncier I think about 4.3 per cent is the rate.

Mr. Doran: The formation of this landschaft had better be as local as we could make it?

Mr. Hogan: The Credit Foncier of France operates through the entire republic of France. Most of the German institutions operate only in the states in which they are organized.

Mr. Wallace: Then you don't think that the co-operative bank would be a practical thing in the state of Iowa? I quite agree with you there.

Mr. Hogan: I believe in incorporating farm mortgage banks under state supervision. There is nothing to prevent that being done at the present time, but they fail to sell their bonds or debentures at a low rate of interest for the reason that you would not buy them. You don't know whether the securities are on Iowa, Dakota or Nebraska land.

Mr. Wallace: You are out near Creston. What modification of Mr. Harsh's bank would be necessary?

Mr. Hogan: Mr. Harsh's bank is a private institution; it is not incorporated. When he makes farm loans, instead of making the amounts all in one note he makes them in separate notes, so that he can sell them to individuals and in the quantities they want. That is all there is to this Harsh system. He doesn't even observe any of the principles of the landschaft. It isn't any improvement over the present method except that he makes his notes in amounts to suit the borrower. He makes the mortgage to the Land Credit Bank as trustee, which is J. B. Harsh, and there isn't any special security, except that you can look the mortgage up on the record.

Q. Does he guarantee it?

A. Yes, his guarantee is back of it.

Q. What interest does he get?

A. He gets as big a rate of interest as the ordinary loan associations, or larger.

Q. How much more do you have to pay the insurance companies than the man who borrows from the Credit Foncier?

Mr. Hogan: The lowest rate is 5½ per cent. Of course we have for a number of years borrowed as low as 5 per cent, but with commission above that. I understand this commission is paid every year for five years; it is part of the cost of the money. My opinion is that the farmers of Iowa, as good security as they are, ought to borrow money at as cheap a rate of interest as the best railroad securities.

Mr. Doran: About a year ago I was one of the appraisers on a farm loan. The owner was borrowing the money of an insurance company at 5½ per cent; I think he had to pay something additional. We certified that the farm was worth $34,000, and he wanted to borrow $12,000. The insurance company turned that loan down. Within ten days it loaned $6,000,000 to a bank in Chicago at 4.45 per cent interest. I think this will answer Henry Wallace's question. The convenience of making a loan counts for a good deal. I asked the attorney why they did that. He said: "It is an expense to look up the title and look after the interest, and it is a good deal better to loan a large amount to the Continental & Commercial National or some of these big banks. They were putting $13,000,000 in one building, and that is surely not as good security as a farm, but they loaned at .75 per cent less than they would on the farm.

Member: Don't you think that it would be a good thing if the Torrens system was adopted by the state of Iowa?

Mr. Hogan: The Torrens system would be a very good thing. Our abstracts are getting longer and longer each year, and it costs more to have them examined each time, and it appears that every lawyer who examines one will find a new set of objections, and I have found that the same lawyer found some more objections the second time he looked at it.

Mr. Doran: A few years ago the stock of the Northwestern Railroad sold for 389 cents on the dollar; today it is selling for 125 cents; and yet they are borrowing money for less than any farmer in this room can borrow it. It is not the security that regulates the rate of interest, but the convenience of making the loan; and I think the sooner we get the Torrens system the better it will be for the farmers.

R. M. Gunn: If we can establish a system of that kind so that the small investor can get in on it, we will have a system that will be a credit to ourselves.

Mr. Hogan: The important thing is to throw all the safeguards of the law and government supervision about it, so that the investor that buys will know it is good and that it will be paid.

The President: The next number that we will place on our program is President R. A. Pearson, of Ames. You men are aware of the fact that President Pearson has not been with us a great while. We succeeded in inducing him to leave the state of New York and come out here and take the presidency of our agricultural college about a year ago, and possibly a great many of you men have not had the privilege of meeting or even seeing him, and I am sure that you will appreciate this opportunity. I now introduce to you President Pearson of our state agricultural college.

THE STATE AGRICULTURAL COLLEGE.

By President R. A. Pearson.

President Pearson: Mr. President, Friends, and Members of the Organization, it gives me a great deal of pleasure to be here with you. I just came into the hall a few minutes ago. I am sorry that I missed hearing the first paper.

Gentlemen, this, I believe, is the beginning of an age in our agricultural development which is going to be characterized particularly by the activity and usefulness of organization. If you will reflect upon the development of agriculture during the period of the last one or two hundred years, you will recall that there have been marked advancements from time to time. Away back in the early years the farmers thought out a system of under-drainage, and by means of that practice they were able to greatly increase the yields of crops from their lands, and that marked a new epoch. A little later there came the fertilizers, and by means of their use the farmers were able to increase the yield of their crops; and that marked another new development. And so on along down the line there have been great things introduced into the agricultural world from time to time, each good in its own way, and continuing to the present day and being further and further developed at the present time.

One of these great epoch-makers was the widespread introduction of the leguminous crops. It seems to me that if ever anybody gets something for nothing it is in connection with those crops. Just by putting one of those crops upon the land and properly inoculating the soil, if not already properly inoculated, we are able to secure the most valuable plant food there is, right out of the air, without making any payment or doing any work ourselves for this blessing.

In the South many years ago they had a street car system drawn by mules, and of course the mules worked hard at their job. The war came, and when it was ended an enterprising northern company came down into that southern country and re-organized the street car system. They electrified it and put on trolly cars, and a good man who lived in the town stood on his front porch one day and was awe-struck to see a car coming down the street without the mules. He called to his wife: "Samantha, come out and see this thing on the street. The Yankees came down here and freed the negroes, and now they have come down and freed the mules."

And so it happened that when these leguminous crops came into our lives we were freed of a heavy burden. And, passing on, there came the age of machinery, and the great age of the development of agricultural education. And now I believe we are at the threshold of a period of great development along the line of agricultural organizations. All other industries are organized, and the farmer has been one of the last to see the advantages that might come to him by getting together with his fellow farmers for many different purposes. We know something about the organizations of Europe, but we shouldn't make the mistake of thinking that those ideas may be introduced bodily and made to succeed here as they succeed there. Mr. Wallace has recently studied conditions in Europe and made a very comprehensive report on the subject to the governor, which everyone should have read; and he emphasized the point that conditions are different here, and we must not expect to apply here identically the same remedies for our different conditions as are being operated to advantage in those European countries. But we can get helpful suggestions and ideas from over there which may be introduced here.

Here is an organization which has for its special interest the production of meat; and other organizations meeting in this city have for their particular interest the production of fruit; and there are as many organizations now, almost, as there are distinctive subjects in agriculture. It remains for us to strengthen our organizations; to draw into their membership those persons who are interested in the common subject; draw up constructive programs, and then determine to follow the programs out and get the benefits to which we are entitled; and I expect to refer to some of those benefits. Whatever this organization or any other may stand for, there is one subject in common that they all stand for, and that is the good or the advancement of our agricultural education; and I want to speak to you just a few words about the institution that stands for the advancement of agricultural education at Ames. And let me emphasize here a very trite saying that this institution belongs to the people of the state. I wish they really could appreciate that point as I do. A good many persons seem to think that when recommendations come from that college for appropriations, it is a favor to the faculty that those appropriations should be granted. Quite the contrary is true. That Board of Education and the faculty are in charge of your institution only temporarily and by your grace, and it is their purpose and their duty to carry out your wishes in connection with that institution. If your legislature makes an appropriation of one dollar to that institution, it is for you, the people throughout the state, who are expected to enjoy the benefits of the institution; and if they fail to enjoy them, the institution is not making good and the management ought to be changed.

The purposes of colleges are not understood as they should be. I was in the good old city of Dublin some months before Mr. Wallace got there, and was riding on one of their Irish jaunting cars; and I said to the man driving the car: "What is there here that is worth seeing?" "Faith," he said, "an' there are two things: Trinity College and McGinnis' Brewery!" I do not know what his idea of that college was, but the people of this state, thanks to congress, for many years have had a land-grant college, and the people of every other state have one such college, and every country in the world that is civilized has a similar institution; and the purpose of that institution is, under our national law especially, to serve in the interest of the industrial classes. I am glad that I belong to that class. I think those are the classes that are useful, and I look upon the other classes as being parasites upon the industrial classes. I am glad congress saw fit to establish one institution in each state, the leading purpose of which should be to serve the industrial classes. I don't deny that other institutions are doing it to a greater or less degree, but these institutions' first business is to work along that line.

I am naturally proud to be connected with the institution at Ames, not because of the buildings or grounds there, nor because of the fact that we are in this great state, but because of the faculty which is working there—the scientific men who are employed from day to day upon these problems that we are engaged in studying; and more particularly because of our splendid student body; and whenever I stand before an audience of farmers, as I did a few days ago in Cedar Rapids, I feel that I am talking to some parents of students at Ames, and a large number of others who are closely in touch with parents of students at Ames; and therefore that I am talking to an audience exceedingly interested in that student body. Now, I can say without any flattery whatever (and if it were not true I would not mention it) that I do not believe there ever was a better student body in any institution. A more earnest, aggressive, self-respecting and ambitious lot of young men and women could not be gotten together, so far as I am aware, and I have seen a good many student bodies. They seem to feel that there are things worth while learning, and that their time is short and it costs money to get an education, and that the state is investing more money than they are. We hear a good deal about the pranks of students in college. You would be sorry for a young man who didn't have some life and red blood. But let me tell you something about those pranks at this institution. Last year the freshman class got together and passed a resolution which said, in effect, that "we think the time has come when freshmen and sophomores in institutions of higher learning should cut out all this nonsense of antagonizing each other and annoying each other at every opportunity; we think it should be stopped once and for all; and in the place of it there should be substituted a genuine feeling of friendliness and helpfulness." That was an epoch-making thing in connection with colleges and universities, for I don't believe in all the history of the country, such a resolution has been passed before. They instructed their president to appoint a committee of thirty young men to carry out their resolution, and he appointed thirty of the most popular fellows in the class; and this year, before college opened, those boys—then sophomores—came to Ames a few days early, put on badges, "Sophomore Reception Committee for Freshmen"! Just think what that means, you men who have been to college and crawled under the bed thinking that somebody was going to get you out and play pranks with you! They met every train that came to the city, day and night, and when a young man got off the train there was an outstretched hand: "Glad to see you; we are here to help you!" They took them out and showed them where to register, and got them places to stay, and those who came at midnight were taken to the rooms of the Commercial Club, where the boys had twenty-five or thirty cots.

Do you approve of that kind of an attitude at your state college? Isn't it remarkable? Well, you would think it remarkable if you could see the communications that come to me from presidents of some of the greatest universities and colleges in this country, stating that they wish their student bodies would take a position of that kind, and asking for information for the benefit of their student bodies. I am very proud to be connected with an institution of that kind, and I can't explain in any other way that our students have such a fine spirit than by the fact that they come from fine homes and farms, and have been well raised, and have the best principles of manhood and womanhood instilled in them.

There are five hundred of those students young women. They talked a year about doing away with those girl students, but the boys objected. A wise man came down to Des Moines and spoke before the legislature, and said he thought it was a good idea to have the boys and girls educated together, and that he didn't take any stock in the statement that boys and girls come together just for the sake of finding their life companions. Furthermore, he thought it would be well, anyway, for the state to give a little more attention to the subject of matrimony, for if they did, the courts would have to give less attention to the subject of alimony. Those young women come there with a firm resolve to be spinsters, and live all the rest of their lives teaching the subjects of home economics and domestic science; but they break away from those resolutions! It has been said that within nine years about ninety per cent have given up the idea of teaching other people's children, and have gone into homes of their own.

Of the balance of the students, something near 2,000—more than half are in courses of agriculture; and by far the larger number of girls are in the regular agricultural course. Remember that the great majority of those boys in agriculture are going right into agriculture after they leave college. It was not so a few years ago. In our special collegiate course, in which there are something over 200 young men, inquiry has shown that about 97 or 98 per cent are planning to go right back on the farms; and in the case of the four-year course 76 or 77 per cent of those boys go back on the farms and the rest of them become teachers or investigators on agricultural subjects.

Why was it that some years ago the agricultural college at Ames, and agricultural colleges in other states, were not educating more young people along agricultural lines and sending them back to the farms? You know many people think that condition still exists. Twenty years ago there were very few young men studying agriculture, and here is the reason. because twenty years ago there was very little to teach them. In the second place, it didn't pay very much to learn it. I was in a course of agriculture at that time; H. C. Wallace at about the same time. We found one man at the head of the agricultural college. He found James Wilson; I found I. K. Roberts—a man who had gone east from Iowa. In each case that one man knew pretty near all that was to be known about agriculture. There have been wonderful changes since that time, and now, instead of one man being able to carry in his head all that is known about agriculture, if is could be evenly distributed, I suppose it would take twenty-five or thirty of them to carry it all. Here is Professor Evvard. If there is anything that he doesn't know about breeding pigs, I wish somebody would bring it up. That is the portion of agriculture that belongs to him. But if we should ask him something about the blight of the pear tree, or something about what to do for the Colorado potato beetle, he would run and crawl under the bed. I imagine he would not pretend to know anything about it. But if you want to know something about the breeding of animals, ask him, and if he doesn't know, you tell me. Whereas, twenty years ago we had one book on agriculture, today there are literally hundreds.

How does it happen that this tremendous amount of information has come out during these last few years, when the world has been waiting so long for it? Cause and effect—we had to have it. Our methods of farming are changing very rapidly. Those of us who are right in the business don't appreciate it, but they are changing nevertheless. Our government made it possible to get this information by pouring some millions of dollars every year into experiment stations to maintain scientists. They are unlocking storehouses of great secrets, and the colleges and the agricultural papers are giving out this information. It is new information which has been developed in very recent years.

And why is it necessary to have this information? Can you remember when you used to go out in the orchard and find a nice, plump apple without a blemish on it? You can't do that today. Why can't you? Because in these recent years, for some reason or other, the codling moth has come in to do its business, and other insects have come in to get at the vitals of that apple, or the blossom that preceded it, and to attack the tree in various ways. It is an actual fact that today, according to official statistics made by an entomologist who is looked upon as authority, there are no less than fifty-six kinds of bugs that infest an apple tree alone. You remember well how we would go out into the potato field, and we didn't think anything about the Colorado beetle or potato blight. You know how it is in Iowa now; we can see the trees filled with splendid foliage. But just let me take you in imagination down into Massachusetts or New Hampshire for a few minutes, and there, along in July or August, instead of finding those trees full of foliage, every leaf is stripped off and eaten by the larvae of the browntail moth and the Japanese moth; and the United States government has an army there fighting them. Already they have spent more than $7,000,000 trying to keep those pests in the area already infected. Those insects have already come into the state of Iowa. Professor Summers, whose duty it is to examine all nursey stock that comes into this state, has found a number of nests of those terrible pests.

I will not refer to cattle diseases. How does it happen that all of those things are coming onto us so rapidly? I want to explain one way in which they come. We are living in an age of mad rushing from one thing to another and one place to another. It is characteristic of the age. We get our minds set on one thing, and we want to do it to the neglect of other things. We boast of the fact that we can get a letter from here to New York City in about thirty-six hours, and we think it is a great thing to get a package from Asia in two or three weeks. It is, so far as convenience is concerned; but did you ever happen to think that that rapid transportation is serving to bring pests from one part of the world to another which previously would have perished on the way? That is one reason why we are getting these new troubles.

I can tell you one concrete instance. There is a great firm in another state whose business it is to make serums—diphtheria antitoxin and lymphs of various kinds—and the physicians all over the country are sending to that concern and getting these life-saving materials, and that firm is doing fine work. They sent over to Japan a few years ago and got a little four-ounce bottle of vaccine, and with that start they were going to make some virus to send out for use against smallpox. They opened the bottle and inoculated the material into some calves, and the calves developed a mild form of the disease, as they should; and they got some of the vaccine and sent the calves to the market never dreaming but that they were the same as thousands of other calves that they had sent. But without realizing it, they had inoculated from that bottle into those animals also the germs of foot and mouth disease, which is prevalent in Japan, and which does not exist in this country—the most contagious of any of the animal diseases; and when it was discovered in this country, the veterinarians rushed to the scene very much the same as you will see a fire company going to a fire in a city. They said: "We must crush this thing out at any expense." And so, after some weeks of work, every last one of those animals was located, and every animal they had come in contact with was located, and every spot where those animals had walked or been cared for, was carefully disinfected; and at last, through the co-operation of the federal authorities, we are able to say that the last of this disease has now been seen in this country; and it cost about $100,000 to do it.

What would have happened if that action had not been taken? The same thing that is happening in connection with other pests that have gotten abroad in Iowa, like the codling moth and the potato blight, and like tuberculosis of cattle and some of these terrible diseases. So we have these new problems that are being forced upon us, and we have educational institutions of various types and kinds whose duty it is to bring together the best information and disseminate it again.

Farm tenancy is one of the greatest questions of the age. How I wish a remedy could be found for treating that question as it deserves and handling it in its incipiency (for it also is a disease) before it becomes more widespread. I had it impressed upon me in Ireland—that is where you go to get the best ideas—some time ago, of what farm tenancy really means to a farm. I visited a farm conducted by an intelligent man. He had lived there for twelve years when I called on him. He told me something about how he cared for that farm as a tenant, knowing that he might move off of it later. He thought I was a government detective, and looked me over carefully from head to foot. Finally he said: "I believe you are all right; I thought first you were here to spy on me and get my taxes raised. Come on in and have a drink of whisky."

Then I knew he was a good Irishman! I said: "No thanks; I don't believe I care to." He replied:

"It is fine whisky; the best there is; better have some."

"No," I said; "I guess I won't indulge this morning."

"Well," he said, "that is all right; I don't drink myself; but I thought you would like to." Then I knew he was a better Irishman!

That man told me that he had lived on the same farm for nearly twelve years as a tenant, never knowing from one month's end to the next whether he would stay on it or not, and during all that time he hadn't spent one cent upon buildings or property that was not absolutely necessary for him to spend, and his buildings were literally falling to pieces. The floors were out and the roof leaking, and the farm buildings were going to pieces, and the fences were down, and the place looked like rack and ruin. Then there came into effect a new law in Ireland, which made it possible for those renters to gain permanent possession of their land. He found that he could sign some papers that would make that place his, provided he continued to make an annual payment at the proper place for a period of sixty or seventy years, and as long as that payment was kept up, the farm would continue to be his. The payment was not as large as the man had been paying to the absent landlord, without ever coming into possession of the property. He said he had no more than signed those papers before he came back to his farm and began to fix it up. He more than doubled the size of his house, laid out a nice garden around the front, and there it was, with the gravel walks, hedges and flower beds. In the rear was a vegetable garden. He had put up a new barn costing him $1,000. His family had taken on new spirit and hopes, and it was an entirely different place.

Some of you gentlemen probably know much more about this farm tenancy problem than I do; but it is a question we ought not to be overlooking. I tell you, gentlemen, that these questions coming up are making us realize more and more that the science of yesterday is the practice of today. Only a few years back, Pasteur, the great scientist of France, was working week in and week out, trying to find some way by which he could kill the bacteria in delicate milk and not injure the fluid, and he worked with all the scientific apparatus at his command, and patiently continued on the problem. Sometimes he thought he would not be able to do it, but finally he came to the solution of that question. He could kill the bacteria in a delicate substance and not kill the substance itself; and he published that result in a scientific journal, and other papers published it; and today milk dealers in all of our largest cities are pasteurizing their milk on exactly the principles that Pasteur laid down, and there are men getting $10 to $15 a week who are doing that work as well as Pasteur himself could do it. The science of yesterday is becoming the practice of today.

I have heard a man say, in the face of statements of the best scientists, that there is no such thing as hydrophobia of dogs or animals, and that there is no such thing as a mad dog; and he was an intelligent man, too. Indeed, he was a physician, and he pooh-poohed the idea of there being such a thing or any remedy for it, and did all he could to counteract the efforts of the officials and experts to eradicate that disease. One day while in his office he heard the tramp of many feet upon the porch of his house, and the door was opened and the men said: "We have a boy that has been bitten by a dog." The doctor said, "That doesn't amount to much." He took off his coat, put him on the table and turned around and looked down into the face of his own little son! And somehow or other, something seemed to come over him all of a sudden; he seemed to realize that perhaps it did amount to something. But he tried to be brave and carry out the idea that he hadn't made a mistake in the past. He treated the little boy as best he could, but in about a week or ten days the little fellow's arm began to twitch and turn and double up, and he got cramps in his legs and suffered untold tortures, and he died under the care of his own father. And then that father admitted that there is such a thing as hydrophobia, and after that he was willing to help stamp out that awful disease.

I tell you the science of yesterday is becoming the practice of today. And you gentlemen have a right to expect, as I have said before, that our agricultural college shall get together the very best material that is available along agricultural lines, and assist the many other agencies that are engaged in distributing that material, so all may avail themselves of it. I think of agricultural organizations as having high standards along their own chosen line—high standards of living—high ideals. And I think of the splendid combination of agricultural organizations working hand in hand with agricultural colleges everywhere; and I like to think of the unlimited blessings and benefits that may flow out over our great state when these great forces are working together.

The President: The next number of the program that we will call for at this time is Dr. W. B. Niles, who is connected with the veterinary department of the Department of Agriculture of the United States, on this hog cholera proposition.

HOG CHOLERA TREATMENT.

By Dr. W. B. Niles.

Dr. Niles: I have been so much interested in these papers and discussions that I was rather in hopes the president was going to forget that my name was on the program.

When your secretary asked me to give you a talk this morning on the subject of hog cholera, I hesitated somewhat, for the reason that so much has been said and written on this topic within the last few years that anything more might be superfluous. However, as there seems to be some disputed questions in connection with the serum treatment for hog cholera, I am glad to be with you this morning. I do not care to take very much of your time; I wish simply to give you a kind of a rambling talk covering a few of the more important points, and then give you some time for asking questions.

The question of hog cholera seems always to be a most important one. I was thinking while the gentleman was discussing the question of farm credits, whether, if we could eradicate hog cholera from the state of Iowa, there would be quite so many of us needing credit. We would not have to make quite so many mortgages on our farms if we could eradicate this plague. I hope to try to show you that we may be able to eradicate it from the state of Iowa; in fact, that it can be eradicated from the entire country.

First, as to the nature of hog cholera. What is this disease commonly called hog cholera? I want to emphasize that hog cholera, as we term it, is a specific contagious disease which is communicated from one animal to another by means of a specific virus. What this virus is, we do not know. We have never been able to isolate and cultivate the virus of hog cholera as we can cultivate the virus of a great many other animal diseases. We do know, though, that the virus of hog cholera exists in the blood of a sick hog, and that some way this virus, whatever it is, leaves the body of the sick animal through the excreta, and animals coming in contact with the virus by associating with the sick animal, or by coming in contact with the virus after it has left the body of the sick animal, contract disease and thus transfer spores from one animal to another in the herd. We know that this differs from the virus of many other animal diseases. If it is a bacterium it is very small, and consequently it has been termed a filterable virus, so small that it can pass the finest porcelain filter. We can readily filter out the germs of most diseases. It may be a protozoon parasite, but it is something that exists in the blood of the sick hog, and while we have been able to manufacture a serum that will prevent it, we have not discovered exactly what the virus is. Consequently, recognizing that it is a specific contagious disease, I wish you to remember that the disease can not be engendered in any other way except by means of this virus. If you keep this virus away from your herd, your hogs will not contract hog cholera; that is, it is not possible by feeding your hogs any unusual food or damaged food, or anything of that kind, to start up a case of hog cholera; you must have this specific virus. So I want you to get the idea out of your heads that you are in danger of starting hog cholera if you feed new corn, or that they get hog cholera from close confinement. You can not get hog cholera except you have the presence of the hog cholera virus, whatever that may be.

Henry Wallace: Can't you, by over-feeding green corn, produce a condition that looks awfully like hog cholera?

Dr. Niles: I don't think so. Hog cholera, like those other diseases that Dr. Pearson has been telling about, we don't know the start of. They were started by the Creator, the same as everything else. We didn't have hog cholera for a good many years after the settlement of the country, but we have every reason to suppose that it was imported from England. We have been able to stamp out some of these animal diseases. We have stamped out contagious pleuro-pneumonia and foot-and-mouth disease. We have a horse disease that we have not been able to stamp out, and are working on now. Hog cholera was reported back in 1833, and it has spread ever since; but where in England it came from, we don't know. We suppose that these specific diseases were created at some stage of the world. But we do know now that we can't get hog cholera in any other way except by the presence of the specific virus. If you inoculate another hog with the blood of a sick hog, in almost every case you get hog cholera; or if you associate a well hog with a sick one you will get hog cholera. Of course, sick hogs may run on one side of a barbed wire fence and well ones on the other, and the disease not be communicated; but that is an exception to the rule.

As to the means by which this disease spreads, we find that in order to control hog cholera, it is extremely necessary to take precautions in regard to the spread of the disease. The disease spreads by means of the virus being conveyed in some way from place to place. The sick hog is the most dangerous factor. A sick herd endangers nearby surrounding herds because of the possibility of the virus being conveyed from the sick herd to the other herds. The usual history of cholera outbreaks is that the disease appears on certain farms; it spreads slowly from one farm to the nearest farm, usually; then it spreads from that herd to the next nearest herd. Sometimes, of course, it will not appear in the herd nearest located to the one first attacked, but may occur in a herd a little farther away; it depends upon circumstances. If your neighbors live very close together, and go back and forth to each other's hog yards, that is one way of carrying it. It usually extends along highways or along the water course, but spreads slowly from the original center of infection.

Suppose the original center of infection is shown in the spring of the year. It extends slowly during the early summer months, but along in the fall, at the time when every farm contains quite a number of good-sized hogs, they are extremely susceptible of cholera, and at the time they eat green corn we have a lot of susceptible material. About this time of year, cholera having gotten quite a good hold during the early summer months, you begin to hear more about it. Some of you are buying shoates from other farmers at this time; so it happens that hog cholera and green corn appear about the same time of year. You can of course make a hog sick by giving him green corn: you can set up intestinal disorder; but I have never seen a large number of hogs made sick or die on any farm where they have been fed on green corn without being able to find that that herd had hog cholera. So I do not believe it to be possible for you to take a herd of hogs and feed them on green corn and make a large number of them sick with symptoms of hog cholera, and show hog cholera on autopsy. So we ought not to lay much stress on the fact that the way we feed our hogs has much to do with hog cholera. You will find as you study this question that in many instances the best cared-for herd has been kept in cleanly quarters, has had fresh water, pasture and everything which ought to go to make a healthy herd, and yet that herd is dying most rapidly with hog cholera. Some neighbor of that man, who has filthy yards and hasn't exercised any care, may have his herd free from hog cholera. The virus has in some manner been carried to the hogs in the clean yard, and they got sick, while the man with the filthy yards has escaped the virus.

Typhoid fever in man is quite similar to hog cholera in hogs. The most vigorous man is more apt to take an acute case of typhoid fever. A vigorous man of twenty-five or thirty years generally has it pretty bad, while a weakly man may survive or not take the disease when he has an opportunity. So the important thing for us to remember in connection with the spread of hog cholera is that we must be careful not to bring the virus to our place. In the work which has been carried on in some of the counties of Iowa by the federal government, in co-operation with the State College and the state veterinarian, it has been observed that while the veterinarians and the college people in charge of this work have been constantly telling the farmers to be careful, it is an extremely hard matter to show the people what they ought to do, or get them to do it, in order to prevent the spread of hog cholera.

In Dallas county it has been shown that a number of outbreaks of hog cholera were brought about by the farmer. He would haul his well hogs to the nearest market, and it seems there is a stock yards there in which to unload the hogs. The man has to drive his team into the yards where the hogs run. Several farmers near that town have had hog cholera break out in their herds in eight or ten days after they had driven their hogs there. They have gotten out, walked around the yard, let the hogs out, and then driven the wagons back to their own farms; and the supposition is that they carried the virus from the infected stock yards to their own farms, and their hogs became exposed in that way. In a year like this every stock yard in the country must be regarded as infected; and consequently you see the danger of going into that yard.

Another source of infection which seems to play a more or less important part is the carrying of the virus by farmers in changing work. You are obliged to change work to carry on certain farm procedures. You change work when you build your silo, when you thresh, when you shell corn; and you have a number of farm operations in which it is necessary for you to have more help than you have on your own farm; and consequently you change work with your neighbors. There is great danger in a case like this of carrying hog cholera from one farm to another. I know of numerous instances in different years where hog cholera has followed up a threshing crew. You can readily see that if you drive your team into your neighbor's yard where hogs are dying, and then drive it back into your own yard with a load of corn, where the hogs are running around, there is a chance for them to become infected. Or if you go into your yard with infected boots on, you carry enough litter from the infected yard to convey disease. If you have to change work with a neighbor having hog cholera, you should not drive your team into the infected yard. You ought to wear different clothes and foot covering from what you wear around your own premises.

There are one or two other sources of infection that you can readily guard against. You can guard against going away from home and buying hogs and putting them into your own herd. In some instances we found that that started up an outbreak of hog cholera. If you have to go away from home to buy a hog, quarantine him on your own farm and find out whether he has been exposed to the disease. He may come down with hog cholera five or six days after you get him home, and inoculate your herd.

There are some other sources of infection. In quite a few instances, hog cholera has appeared some little distance away from the infected territory. The question arises as to how the disease jumped five or six miles. The supposition is that it is carried over there in some way, but how is a hard thing to determine. We have found in this county work that in sections where they have carrying birds, like crows, they will feed upon the carcass of a hog, and they may carry enough material on their feet, or in some other way, from the infected farm several miles to another farm to start the disease. As to how many times they actually do this we are not able to tell; but we do know that they feed on carcasses, and we know that cholera appears some distance away. Of course, I have thought it was rather hard on the crow to advocate the destruction of all crows on account of the carelessness of farmers in leaving carcasses exposed; but if all carcasses were at once burned, we would do away with a large part of the infection. They tell me in those sections where buzzards are plentiful that the buzzard after feeding on a carcass will vomit. I don't know of any better way for your hogs to get sick. I do not know whether the crow ever does that. Over in Indiania where we have one county in this experimental work, there are a great many pigeons, and our inspector has an idea that these pigeons have played quite an important role in spreading hog cholera. We can not tell just what this part is, but it is reasonable to suppose that a flock of pigeons alighting in an infected yard, picking up corn, may go right over to a nearby yard and carry the disease.

So if the individual farmer is extremely careful about the way in which he handles his herd, and about going around diseased herds, and keeping people away from his farm that have been around diseased herds, he has a good chance of escaping a good many of these sources of infection; but he would not be able to escape the infection if crows, buzzards or pigeons are going to fly over the country.

I would like to explain to you the method of hog cholera eradication, but it would take more time than we have. You want to hear about the part that serum treatment may play. The serum as worked out by the Bureau of Animal Industry has given most excellent results in the hands of people competent to use it. All of the government experiments have shown the thorough reliability of serum treatment. You have heard over the country about some bad results attending the use of serum in certain herds. I will say truthfully that there are two reasons why serum as used in practice does not always produce the results you want. One is that all serum is not potent, and I am not able to say how much of the serum made by private manufacturers is potent; but we know it is not all as potent as it should be. I believe the private manufacturers are trying to put out a fair serum, and in the main have done so. Another reason you do not get satisfactory results is that a great many people have used serum who do not understand its use. It is necessary to use serum before the animal is sick, or very far advanced in the first stage of hog cholera. If you use serum on sick animals you will not get good results. If you use it on well animals or on those which are just beginning to show fever temperature, you will get good results. If you have bad results, we know that it was used on sick animals, or was not potent, or was given in insufficient doses. You can not counteract exposure to hog cholera if you use an insufficient dose. It must be used in sufficient doses on well animals, or in early stages of the disease. If used in that way, you will invariably get good results, if you use a good serum. We have found that true in all of the counties in which the Bureau is operating this year. We have found it true in the experiment station herds, and it holds true everywhere. In the private practice of the veterinarian, when he has used good serum he has good results. I saw a veterinarian who said he had treated eight or nine thousand hogs with good results. There is no question but hog cholera can be eradicated if you go about it in the right way. We use the thermometer to determine whether they are in the early stages or not. A number of animals will show a rising temperature of 105, 106 or 107 degrees, and to all other appearances look well. Those animals that show those temperatures and no other symptoms are generally saved by the serum treatment, if they are given a sufficient dose.

R. M. Gunn: Would the difference in temperature make any difference in the dose?

Dr. Niles: Yes, sir. The temperature of every animal should be taken, and those animals showing normal temperature receive a normal dose. In the case of animals showing 104 degrees you are not quite sure whether it means fever or not, but I would increase the dose somewhat. If it runs up to 105 or 106 degrees, I would increase the dose by half, and you will get good results on a great many of those, although the Bureau of Animal Industry has never recommended the serum as a cure for cholera. However, it does cure a good many animals in the first stage of the disease. But if an animal shows in addition loss of appetite, or reels when it walks, you might as well save the serum. If it is well with the exception of showing some fever, you will get good results.

Q. Is there any way of knowing whether the serum is potent or not except by trying it on your own hogs?

Dr. Niles: There is no way of knowing except by testing it. You would have to buy from a manufacturer whom you could trust.

Q. Can you accurately diagnose hog sickness?

Dr. Niles: It is not always easy to diagnose hog cholera early; there is not much trouble after the disease has progressed in the herd. If a herd of hogs is showing indications of hog cholera, I wouldn't wait for sufficient symptoms to develop so that I could diagnose without fail; I would use the serum treatment if the general appearances seem to indicate that the herd has hog cholera.

Q. Do you believe all this hog cholera serum ought to be manufactured by federal supervision?

Dr. Niles: All serum plants doing an interstate business are at the present time under federal supervision. The state serum plant has supervision over all serum used in the state of Iowa.

Q. Is it possible that hog cholera virus could be carried from one place to another by the wind?

Dr. Niles: I would say that it is not possible, unless the distance is very short. It might be possible for a hog yard situated a few yards from another to have it carried in that way.

Q. When is it necessary to vaccinate?

Dr. Niles: We don't say that it is necessary to vaccinate all hogs in the country. Hog cholera ought to be eradicated and the danger of infection lessened. We would say that a herd ought to be vaccinated whenever it is in danger of cholera. We say to a breeder that at weaning time is a convenient age for vaccination, but we do not consider that it is necessary to vaccinate the herd as a rule, unless it is in danger.

Q. Hog cholera in the state of Iowa is very prevalent at the present time; our farms are all infected with the germs. Do you recommend that we all vaccinate our herds for the next few years?

Dr. Niles: You couldn't do that; there would not be serum enough. Your premises ought to be as thoroughly disinfected as possible. At the present time, when hog cholera is so wide-spread and your herd is in danger of being re-infected, you will get better results from simultaneous treatment. You ought to know that you have a potent serum and that the treatment is being administered by a competent person.

Q. How can you tell that it is good?

Dr. Niles: If you have a veterinarian who is using the serum with good results, you have reason to suppose that it will do the same with you. If he has bad luck, you would not want to use it.

If you use the simultaneous treatment, I would treat all the hogs. Offspring from immune parents have more immunity at birth, but they gradually lose that immunity, until when they are three months old they have practically lost most of it. It does not seem to make much difference whether the male is immune or not. If the sow is immune, your pigs will have quite a little immunity to start with, and stand considerable exposure.

Q. Does this treatment set up a mild form of cholera?

Dr. Niles: Not that you can detect. If you were to take the temperature with a thermometer, you would find that they have a little reaction.

I was going to tell you this morning a little about the government experiments this year. As most of you are aware, the last session of congress, in making the agricultural appropriation, specified that the sum of $75,000 should be used in making some demonstrations as to whether hog cholera might be controlled or not. The Secretary of Agriculture decided that this work had better be divided among several states, so that one county was selected in Iowa (Dallas county), one county in Indiana, and one county in Missouri. So that during the present season—since July 1st—the Bureau of Animal Industry has been conducting some experiments in those two counties. Our object was to lessen the number of outbreaks occurring in those counties during the present year as much as possible. We had hoped, if we had started early in the spring, to keep hog cholera out of those counties but the appropriation was not made available until July 1st; consequently the work in these counties could not begin until then. The manufacture of serum for this county work also could not be actively carried on until July 1st, when the money became available. When we began work in these three counties we found that hog cholera was quite widespread. We had hoped that it would not become very widespread before we were able to begin work. Our plan of work was to use the serum treatment largely. This work was undertaken in co-operation with the Iowa State College, and the state veterinary department of your state, in Iowa. Our object was to ascertain as quickly as we could where cholera was in Dallas county, as to the number of hogs in the county, and the number of hogs raised the year before, and also in regard to the losses in previous years. Not being able to begin work before July 1st, it took a long time to get the work well started, and by that time the disease was pretty widespread, so that we have not been able to do more in this county this year than to treat a large number of animals. We have been able to save the farmers very great loss. Something like ten or eleven thousand head of hogs have been treated in Dallas county, a similar number in Indiana, and a somewhat smaller number in Missouri. By the treatment of those ten or eleven thousand head of hogs in Dallas county, we have shown that the use of serum alone in a badly diseased herd will save practically all the animals in the herd that are not already infected at the time of treatment. In addition to that, we have been able to save a very large per cent of animals in those herds which were just beginning to show indications of disease. So out of the animals treated in herds where the disease had already begun, we only lost those animals that showed advanced disease, and a small per cent of those in which it had just begun. We found that by the treatment of the herd before they became infected, we saved practically the entire herd. Out of four or five thousand animals treated by the simultaneous method, none were lost in well herds. Our plan was to treat all hogs, both in well and diseased herds. All hogs showing no rise in temperature were given simultaneous treatment. The results in all three counties were practically the same. Our loss in all herds treated was small, with the exception of those herds showing a large per cent of animals well advanced in the disease. In all well herds the average was practically nothing; taking the whole average, it was less than one-half of one per cent; while in those animals that were diseased, we only lost those that were advanced, and a small per cent of those just beginning.

We have found from experience in treating hog cholera in the different states that we have but one epidemic swine disease causing extensive loss. We used to hear about swine plague and hog cholera. We take no account lately of what was once termed swine plague. Whenever hogs are dying in appreciable numbers on the farms, we find that a careful investigation shows the presence of hog cholera. Of course I except some diseases of young pigs which are easily recognized; for instance, ulcerated sore mouth, which occurs in the spring in young pigs. If you could insure your hogs against dying from hog cholera, you would not be in very much danger of losing them from any other infectious disease in this country. In Europe they have one or two other diseases. I would like to have you bear that fact in mind.

If you have a potent serum, carefully administered, you can control this one disease of swine by the serum treatment. Any serum firm wanting to ship from one state to another must be under federal supervision and have a license; within the state they are under state supervision only. If it were known that any private manufacturer was selling poor serum in the state of Iowa, I think his license would be taken away from him. Our contention is that if a good serum be carefully used, it will give good results, and even better than we have claimed for it. One herd of hogs may be extremely susceptible and require a larger dose than another on the other side of the road, which may have a great deal more natural resistance and will survive where the first one would succumb. So a dose of serum for a hog in one herd is not necessarily a dose for a hog in another herd. The user must judge as to what the conditions in the herd are, and whether the herd under consideration needs a large dose or a medium dose. Not being able always to determine this point, it is necessary for the user of serum to give a good-sized dose to almost all hogs. So one trouble with the use of serum has been that the dose was too small. A hog weighing 100 pounds may be saved by 22 per cent serum; that is about the average dose ordinarily. If you want to have nice results in all herds, always give a comparatively large dose of serum. When you have had an infected herd treated, some of the animals were sick and some were not. Unless the temperature of every animal was taken, the man treating your herd did not know how many of them were sick. A hog just coming down should receive an increased dose if you want to get good results. If you find a hog that shows a temperature, increase the dose by half, or even double it, and you will find that the hog will get along and will get well. If you give a hog a sufficient dose of serum, he will not get sick; if you give him not quite enough, he will get a little bit droopy and show quite a high temperature under the thermometer, but get on and get well; if the dose is too small, he will probably get just as sick as if he hadn't had the serum, and die. You know when you are going up a hill in an automobile and don't have your gasoline supply just right, you are going to kill your engine before you get over the top. It is the same way with the dose of serum for a hog. We can't measure exactly how much susceptibility your hog has or just how much potency there is in the serum; the only way to test the serum is to give it to healthy shoates; if it protects in moderate doses, it is good serum; if it fails to protect, we say it is not good serum. I think in more than half of the cases where bad results have been obtained from the use of serum, the dose has been too small. I don't doubt that some rival concerns have sent out serum that is low in potency, but a good many times the fault has been with the administration; a sufficient dose has not been given, nor the temperature of each hog taken.

Q. Can you tell about what age pigs should be treated with double treatment to be immune afterwards?

Dr. Niles: If you treat very young pigs with double dose, a few of them will lose their immunity; if you treat them about eight or nine weeks of age, very few of them will lose it.

Q. How long will the serum keep?

Dr. Niles: We don't believe in keeping it more than a few days. It keeps well if you keep it cool. We have kept serum two or three years, and had it retain its strength, but we don't like to retain it over a week.

Q. I would like to know whether hogs should be thin in flesh or fat.

Dr. Niles: We have always considered that the hog excessively fat is more susceptible to hog cholera than the leaner animal; that is, they will die in greater numbers if disease attacks the herd. Consequently, we find that the pure-bred swine that have been fed high will contract the disease more acutely, and a larger per cent of them die if there is nothing done to them, than the ordinary farm herd, and we always give them more serum than the ordinary animal.

Q. Do you find that hogs are attacked with more violence where there has not been any immunity in the herd for a number of years?

Dr. Niles: If hogs have been bred continuously on a certain farm, without any animals having been brought in that have been through cholera, I think you are apt to find that you develop a type of hogs more susceptible to cholera than otherwise. If cholera has ravaged a neighborhood for several years, you are more apt to develop a type of hogs that is immune.

PART VII.

Extracts from State Dairy Commissioner's Report of 1913.

W. B. BARNEY, Commissioner

In looking over the yearly reports made by the commissioner in this department since it was organized in 1886, we are sure that in no one year has greater progress been made than since our last report handed Governor Carroll on November 1st, 1912. This applies to all branches of the work in charge of the department. A year ago now, we were responsible for the enforcement of the following laws:

DAIRY LAW
PURE FOOD LAW
WEIGHT AND MEASURE LAW
AGRICULTURAL SEED LAW
CONCENTRATED FEEDING STUFFS LAW
CONDIMENTAL STOCK FOOD LAW
PAINT AND LINSEED OIL LAW
TURPENTINE LAW

Since that time, the Legislature has enacted an entirely new

WEIGHT AND MEASURE LAW
SANITARY LAW
COLD STORAGE LAW
COMMERCIAL FERTILIZER LAW AND
CALCIUM CARBIDE LAW.

Of the new laws given over to this Department, for enforcement, the first three mentioned were recommended by us in our last report and originated in the Department. They have increased the work and importance of the Department measurably. At a conservative estimate these new laws add a third to our work.

We consider the Sanitary Law and the Weight and Measure Law as important as any of which we have the supervision. They, perhaps affect more people than any other two laws on the statute books. It may be considered quite a compliment to Iowa people that we were not obliged to enact a sanitary measure at an earlier date. Indiana and several other states have had a law of this kind for a number of years.

A matter of importance which we think the legislature overlooks, is the necessary help that is needed to enforce new laws when they are enacted. The fact that a law is enacted and placed on the statute books means little or nothing if we are not given the necessary inspectors and other help to see that it is complied with.

COST OF MAINTAINING DEPARTMENT.

We think that some unjust criticism has been made of the Department on account of the fact that it has not been self supporting. In the first place, it was not the intention of the framers of the Dairy and Food Laws to make this Department self supporting. The Government appropriates many hundred thousand dollars yearly for the enforcement of the Dairy and Food Laws. When the present commissioner took charge of the Department, the annual revenue from licenses, tax tags, etc., amounted to $9,593.24. Last year it had increased to $22,049.02. This year, ending November 1st, 1913, the earnings are $36,504.52. As all fines under the Food laws go into the county school fund in the county where these cases are prosecuted, this should be added to the earnings. At a conservative estimate this amount would reach $5,500, making a total of $42,004.52.

As compared with an adjoining state with 150,000 less people, we find that for maintaining the Dairy and Food Department for the year 1912, the cost per capita was $.0307 for that state, and for Iowa, $.0095.

This year on account of the increased revenues, the Department will be almost, if not quite, self supporting. We beg leave to call your attention to the fact that no other state Dairy and Food Department has the number of laws for enforcement that we have, and that the greater the amount of work the more help is necessarily required to properly look after the work, and the greater the cost.

WORK OF INSPECTORS.

We have been trying out the plan of having some of our inspectors do all kinds of work. Those designated in the list given in this report, as "Assistant Dairy Commissioners and Food Inspectors," have been looking after the enforcement of all of the different laws in the territory they cover. By reference to our former reports you will find that this plan of work originated in the Department some three years ago, and not with the Committee on Retrenchment and Reform, or the special Efficiency Committee as some have been led to believe.

We put on two men over two years ago so that we might know from experience whether there was any advantage either by reason of saving in expense or efficiency in handling the work. If we only had the enforcement of a few laws the plan would be quite acceptable and in certain territories it works fairly well, even with the enforcement of the thirteen different laws. In other sections of the state, we find it practically impossible to handle the work in this way. We have found that the work of an inspector, if properly looked after, is a "real man's job," and that this is especially true since the Sanitary and Weight and Measure laws have been added. There is no saving in expense under this plan, and as we all know that this is an age of specialists in all lines, we do not know why it should not apply in a measure to work in this Department. If houses like Marshall Field & Company and Hibbard, Spencer, Bartlett & Company find it necessary to employ from two to five men who visit Des Moines and other large cities in the state, representing the different lines of merchandise they have to put on the market, they do it because these men are specialists in the various lines. In the memory of many middle aged people, the doctor acted as surgeon, dentist, eye, ear, nose and throat specialist, veterinarian, etc. Today, specialists in these lines do this work and the man who claims to make good in all these various lines is generally sized up as a fraud.

INCREASED INTEREST IN DAIRYING.

As an indication of the increased interest in dairying, we quote the following with reference to the exhibit of dairy cattle and dairy products at the 1913 Iowa State Fair from the Breeders' Gazette, one of the leading live stock journals of this country. In fact, this paper is taken as authority everywhere. In speaking of dairy cattle they say:

"If state fair exhibits afford any indication of a commonwealth's progress, the milch cows of Iowa are forging ahead more rapidly than any other class of animals. A 13 per cent increase in the number of entries afforded the largest exhibit of this sort at any state fair west of the Mississippi."

In speaking of the dairy exhibit, we quote from their comments the following:

"The dairy exhibit in this building is impressive but scarcely adequate. The time is coming when this industry will ask and deserve a separate building. The dairy and food commission continues its valuable work of teaching by precept and example the importance of modern methods of dairying and warning of the latter-day adulteration of food stuffs. In the refrigerated glass exhibit case the lesson of profitable production through breed improvement was driven home. A square of butter represented the annual production of the average Iowa dairy cow—140 pounds, which at 30 cents represented a gross income of $42. Over against it stood a huge block of butter, representing the yearly yield of the world's champion butter cow, Banostine Belle DeKol, weighing 1,270 pounds and valued at the same price per pound $381. It is the highest province of a fair to enforce just such lessons."

As further evidence of the wonderful and rapid development of the dairy industry one only need to visit the Dairy Show held at Waterloo under the auspices of the Iowa State Dairy Association and Dairy Cattle Congress. This great exposition is fast attaining a national reputation. Among the 800 head of dairy cattle entered in this show, were the best from ocean to ocean. The cattle winning at this show were National Dairy Show winners.

Addresses were delivered at this convention by such noted speakers as Governor George W. Clarke, Lieutenant Governor William L. Harding, President Raymond A. Pearson of the Iowa State College, while the Secretary of State, Hon. William J. Bryan, and also the Hon. Maurice Connolly, Congressman from the Third District, journeyed all the way from Washington, D. C., for the purpose of addressing this convention. Besides the addresses by these distinguished gentlemen, talks were made by dairymen and professors of recognized ability from this and surrounding states. Much attention was given to production and quality and we wish to congratulate and commend the buttermakers on the marked improvement and the high average score of the butter they offered at this show.

No other state is able to stage such a show and we feel that the general uplift in dairying in Iowa is due to the united effort and harmonious work of the dairy department of the Iowa State College, the Iowa State Dairy Association, and the State Dairy and Food Commission. Our last report gives the amount of creamery butter produced in the state as 91,738,573 pounds. This report shows an output of 96,953,183 pounds, an increase of 5,214,610 pounds for the year. We believe this is the result of educational work done by these departments.

The high price of beef has induced many to send a portion of their cows to slaughter, so that there is no reason to believe that we have as many cows as formerly. There are many evidences that on the whole our cows are better and that from this time on we will be getting results on account of the use of the pure bred dairy sire. We have been untiring in our efforts to get our dairymen to use pure bred dairy sires and it is a source of no little satisfaction to know that at a recent sale of grade dairy cows the average prices were as follows: Twenty-four aged cows averaged $133.75; seven two year olds averaged $108.21; seven yearlings averaged $63.00; six calves, two months old averaged $40.00. All cows in milk had been in a test association and their records were made public at time of sale, thus showing the value of the test and of their owners being able to give information as to what these cows had done and what could be expected of them. Their average yearly production was over 270 pounds butter fat per cow. While this is not an extremely high yield, it is so much better than the average cow, that it justifies the price paid for these cattle.

SAVE THE CALVES!

In our last report we called attention to the fact that there was a tendency among dairymen to rush the calves to market, getting out of them all they will bring for veal. In view of the fact that there is a great shortage of dairy cows, this is to be deplored. The following clipping shows to what an alarming extent the slaughter of calves is practiced.

"The advocates of the proposed legislation to protect calves estimated that about 9,000,000 calves are slaughtered in the United States each year, and that if these calves were allowed to reach an age of three or four years before being slaughtered the supply of beef would be increased 9,000,000,000 pounds and the leather supply augmented by 279,000,000 feet. These are considerations worth taking into account."

As a good high grade dairy cow at the age of three or four years is worth from $100 to $135 or as much as a good steer, this would apply to the dairy breeds as well as the beef.

The practice of slaughtering the calves was begun several years ago when on account of cows selling from $35 to $60 it hardly paid to raise the calf. Now, you cannot afford to kill them, and we predict that unless something is done in the near future toward creating sentiment against this woeful waste, the legislatures of the different states will have to take the matter in hand. With our population increasing rapidly, we should not be at all surprised to see good grade dairy cows sell as high as $300 within the next five years. It will pay you to save all of your choice heifer calves.

INCREASE IN NUMBER OF CREAMERIES.

A number of new creameries have been started within the last year and several that had been closed have reopened. The creamery promoters have not been quite as active as in the past as many of our people have learned that if their community has reached a point where a creamery will be supported and they wish to organize and build they can save anywhere from $1,000 to $2,000 by taking the matter up with this department or the dairy department of the Iowa State College at Ames. The college has only recently issued a bulletin on creamery construction from which you can get plans for almost any priced building desired.

EDUCATIONAL WORK.

Speakers from this department have addressed several hundred meetings within the last year and we have many engagements booked for this winter and next spring. We have furnished a large share of the speakers for the dairy train operated jointly by the Iowa State Dairy Association and this department. Many of our addresses have been before Dairy Picnics, Farmers' Institutes, Pure Food Shows, Women's Clubs, Chautauquas, etc. We have made good use of our stereopticon lantern at many of these places.

NEW OFFICE BUILDING A NECESSITY.

We called attention in our last report to the fact that there was great need of new quarters for this Department. We sincerely regret that the House did not see fit to pass the bill that was introduced and passed by the Senate, providing for a new office building. We have recently been given a little more room, but the building we occupy, an old flat or apartment house, is at best an old shack and not well suited to our work. Many other departments in the Capitol are overcrowded and a good sized office building could be used to advantage.

LICENSING OPERATORS OF BABCOCK TEST.

No law ever enacted has been of greater benefit to the creamery and the honest cream buyer than this measure. The Anti-discrimination Law improved conditions, but all that the dishonest buyer had to do to boost the price was to give a test of 25 on cream that tested but 20 and there was no way to check him in his crooked work. Since this law was enacted and the commissioner was given authority to withhold or revoke licenses for either over or under-reading the test we do not get one complaint where we used to receive ten. All of which goes to show that everyone is getting a square deal and that the creamery just starting is not subject to the unfair competition of former years. It is a matter of satisfaction to note that neighboring states have recently enacted laws that are duplicates of ours.

There has been some opposition to these measures but it generally comes from those who dislike to comply with any law.

GROWING ALFALFA IN IOWA.

When properly cared for, alfalfa can be grown almost anywhere in Iowa with success. It has been thought that this legume is not well adapted to Iowa climatic and soil conditions and does not fit well into Iowa rotations, but practical experience does not justify this view. The success of many individual farmers and the result of experiments on various soils and under various climatic conditions demonstrate that if proper methods are followed alfalfa can be grown profitably on nearly all Iowa soils.

On most Iowa soils alfalfa can be seeded successfully in much the same manner as red clover and the following year yield practically twice as much. It is claimed by old alfalfa growers that it is easier to get a stand of alfalfa than of red clover. It is true the cost of alfalfa seed is usually some greater, but it yields so much more hay and generally is so much more valuable than red clover that the cost of seed becomes a small item. Today nearly 30,000 acres in Iowa are devoted to the raising of this crop.

Alfalfa is capable of returning a greater profit, acre for acre, than any other crop produced on our Iowa farms. This may seem a radical statement to those accustomed to consider corn and wheat the only sure money crops for the state and to look upon the adaptability of alfalfa as more or less doubtful, yet the facts available and presented in the following table prove this to be true.

	Yield per acre	Value per unit	Value per acre
Alfalfa	2.7 tons	$11.60	$31.32
Tame hay	1.1 tons	10.15	11.16
Winter wheat	18.5 bu.	.86	15.91
Corn	39.8 bu.	.36	14.32

The high value of alfalfa for feed, either in the form of hay or as a pasture, can hardly be over estimated. In comparing alfalfa with other field crops relative to protein content we find that alfalfa contains 5.5 times as much protein per acre as timothy, 5 times as much protein per acre as oats. 2.75 times as much as corn and 2.6 times as much as red clover.

As a soil builder each acre of alfalfa in the state annually adds to the farm over twice as much nitrogen as the average acre of red clover. This phase of alfalfa growing will not be overlooked, nor the importance underestimated as farmers realize more fully the need of giving greater attention to maintaining the fertility of our Iowa soils, in order that we may at least retain our present crop yields, to say nothing of increasing them.

METHODS EMPLOYED AND RESULTS OBTAINED IN IMPROVING THE MILK SUPPLY OF IOWA.

The first laws passed regarding milk in the State of Iowa were contemporaneous with the establishment of the office of State Dairy Commissioner. This was in the year 1886. He had but one deputy whose duties were merely clerical and the energies of this department were devoted almost exclusively to the gathering of data and statistics along the lines of dairying in general. Public attention had been drawn to the state of Iowa in 1876 when butter made at the Springville Creamery in this state had been awarded the gold medal at the Centennial Exposition in Philadelphia.

In 1892 the Dairy Commissioner was empowered to appoint in cities of 10,000 or over a local city milk inspector and at this time the standards for milk and cream were also established. The Food laws were enacted in 1906. These local inspectors were usually appointed upon the recommendation of the Mayor and quite often were simply appointed to this office for the reason that they were good "vote getters." However, the compensation for this work being only $3.00 per day for time actually employed, and fifteen tests constituting a day's work, it will be readily seen that the amount of money that any one inspector could draw was quite meager, usually being less than $100 per year.

Prosecution was depended on as the only means for regulating this traffic and practically all cases were for milk low in butter fat, or occasionally one for visible dirt. There was quite an epidemic of ''formaldehydeism'' from about 1900 to 1904. It is not strange that this should have been so at that time for different dairy supply houses advertised preparations as perfectly harmless, known as ''freezene,'' ''milk sweet,'' ''preservaline,'' etc., the base of which preparations was formaldehyde. Numerous prosecutions were made at this time and for this cause.

The office of State Dairy Inspector was created in the spring of 1910. The enforcement of all dairy laws is vested in the Dairy and Food Commisioner, and his duly authorized agents. The Dairy and Food Inspectors and the State Dairy Inspector, as well as the local milk inspectors are appointed by him. These local state inspectors are usually appointed upon the recommendation of the State Dairy Inspector and the Commissioner has made a ruling that he will appoint a local inspector in no city where the local authorities do not take sufficient interest in their milk supply to appoint a city milk inspector whom we also appoint as State Inspector. We do this for the reason that the city takes much more interest where they have money invested and we are able to secure much more competent men as inspectors as the compensation is thus more commensurate with the services rendered.

We impress it upon our inspectors that their efficiency is not to be measured by the number of prosecutions they make and we try to secure as inspectors men who are competent to act as inspectors.

During the past two years we have inaugurated an educational campaign and prosecutions have been made only as a last resort. We are pleased to say that complete harmony exists between this department and all other allied organizations in the state including the State Agricultural College at Ames, the State Board of Health, and State Live Stock Sanitary Board, and the State Dairy Association, and all of these have been doing educational work along dairy lines, particularly the last named which has an annual appropriation of $5,000, which is devoted almost exclusively to educational work.

Our department has a modern lantern and equipment for taking photographs and preparing slides for the same, thus giving us original views and enabling us to show conditions as they actually exist. We believe there is no place for a muck-racker in the discussion of the milk question, hence our slides are largely made up, showing the best rather than the worst conditions. This lantern we use in illustrated talks before women's clubs, milk dealers' associations, doctors' societies, and chautauquas, as well as farmers' institutes and dairy meetings.

We also have been using during the last two years the score card as recommended by the U. S. Dairy Division. This, we find the only systematic way of securing a record of the comparative conditions of the different dairies and in the hands of a competent inspector, it is certainly the best and only method known to us at this time. However, in the hands of an incompetent man, this can do no good and in fact may do harm. You will thus see that we are depending almost exclusively upon the education of the dairymen, as well as the consumers, for the control and improvement of the milk supply and we are thoroughly convinced that this is the proper system and that no permanent good can be accomplished without the hearty and earnest co-operation of all parties concerned, including the inspector, the producer of, the dealer in, and the consumer of milk. The results obtained cannot be measured accurately. We are convinced, however, that there is a marked improvement in the milk supply of Iowa during the last few years and the average score of the dairies is increased with each inspection often quite materially and the efficiency of the inspection can be best measured by the results obtained in increasing the score of the dairies.

The State Inspector was impressed recently with the efficiency of milk inspection while in conversation with a milk man in company with several others. He said this, "When you, with the local inspector, first stopped me and examined the milk in my wagon and said to me that my milk was dirty, I felt like *climbing* out of my wagon and pounding you up, but I was very much chagrined and mortified when you picked up a bottle of milk and showed me the dirt and sediment in the bottom of it. I came near *falling out of my wagon* then, and I said to you that my strainer must have been at fault, but you advised me that the milk in Iowa on the whole would be better if we used no strainer at all, and the right way to do was to keep the dirt out of the milk. I immediately commenced to investigate and find out why and how this dirt got into my milk. I did find out and removed the cause and I never start out on my route now in the morning that I do not examine the bottom of a number of these bottles for sediment.''

In 1911, the Dairy laws then on the statute books were practically annulled and an entirely new dairy law was written and enacted. This law empowered the dairy and food commissioner to use the state's funds in further educational measures for the fostering of the dairy industry. It also provided for a license fee for all milk dealers of one dollar per year in all municipalities, and most important it provided that the commissioner might withhold a license from any applicant whom he might deem unworthy, or revoke a license issued to any person who had violated the terms thereof, or failed to comply with any of the requirements. This provision is certainly a very powerful weapon to use in getting rid of the dirty milk man. We have, however, actually refused a license or revoked the same in but three or four instances. However, when we point out to the ndesirable milk man that he should and must improve his conditions and cite him to this section of the law, it usually has a marvelous effect, providing, he, of course, wants to stay in the milk business.

There was enacted this last winter a new sanitary law which went into effect July 4th just passed. This, however, we believe is the best and most complete sanitary law now on the statute books of any state, and while it has been in effect only a short time, the working of the law so far has certainly been very gratifying to this department and we expect to be able to accomplish great things in its enforcement.

We have thus far outlined the method employed by the state. The cities, however, have been using methods quite varied, and some of these have been ''freakish'' in the extreme. Some six years since, the people and particularly the Doctors, got very much excited and stirred up on the question of bovine tuberculosis and its relation to human tuberculosis and took measures to force the dairymen to have their cows tested and the reactors eliminated. While our friends of the medical profession are usually our strongest allies and need no defense from us, we want to say to you that while they sometimes appear to be unduly exercised about the importance of having the cows tuberculin tested, you must remember that tuberculosis is properly called the great white plague and that they come in contact with its victims and appreciate the importance of its prevention as no others can. In these cities where this measure was instituted it was not followed up and we know of no place where tests of these same herds have been made since the initial test, until within the last few months, and this in only one of these cities. In one instance, a city passed an ordinance requiring that all cows be tuberculin tested in the evening and arrested two milk men the following morning, within twelve hours after the ordinance was passed, for violation of this ordinance. You can readily see that it would be a physical impossibility for these men to have complied with the requirements of this ordinance within this time, and the result was that there was a milk famine in this city the next day. None of the milk men having had their cows tested, they feared an arrest and conviction. After a spasmodic effort along this line, in practically all of these cities these ordinances have proved a dead letter. The usual procedure has been for the mayor and city council to get together and upon the advice of their local health officer, usually a young man who had received his training in a drug store or laboratory, to pass these ordinances without in any way consulting the men most interested,—the milk dealers.

These cities are hardly any two of them pursuing the same method and we are pleased to have them try out the various ways of handling this question with the view to finding out the best way. We are inclined to think and believe from our experience in Iowa, that the best method of improving the milk supply is to grade the milk practically as recommended by the New York Milk Committee. However, it would be folly to inaugurate this system except in cities where a number of dealers could and would qualify for "A" grade, and where inspection is efficient. We find that the breeders of registered cattle practically all have their herds tested, not because an ordinance may require this, but they do it for the protection of their herds against the invasion of this disease. In one city where we have graded the milk, a large per cent of the dairymen have had their cows tested at their own instigation that they might be able to qualify for the "A" grade, and when cows are tested in this way, rather than under protest, to comply with some city ordinance, the testing is effectively done, and will probably be followed up. In this city fourteen different milk dealers had their cows tested during the month of April of this year.

Iowa is particularly fortunate in that she has within her borders no large cities, for we recognize the fact that the larger the city, the more complicated becomes the question of the control of the municipal milk supply. Possibly over 95 per cent of the milk consumed in Iowa is produced within hauling distance of the consumer and 50 per cent of the milk is *consumed* before it is 12 hours old, and 90 per cent before it is 24 hours old. Pasteurization is not extensively practiced and when used it is usually simply used by the larger dealers for the purpose of preventing the souring of the milk. In other words, it is not efficient pasteurization.

Of these local city milk inspectors, we have at the present time 15. Of this number, four are M. D.'s, four are veterinarians, and seven are men from other walks of life. These cities pay their inspectors from nothing to as much as $100 per month for doing this work, and the state pays from $15 to $45 per month. Under the state law, we are authorized to pay these inspectors for securing samples of milk, testing it for butter fat, preservatives and other adulterations, examining the condition of the wagon and utensils and these cities are supposed to pay their inspectors for visiting the dairies, or source of supply, and inspecting them, using Government Score Cards. We believe that this should be turned exactly around and that the state should have the supervision and inspection of the dairies and the city should look after the milk after it reaches the city and is offered for sale.

I shall mention the one greatest factor in this educational work—the Public Press. We find them ever ready to publish items relating to the milk question. This department issues bulletins at frequent intervals and these are quite generally published by the local papers. In some of these cities they insert reports at regular intervals of the butter fat tests of the milk of the local dealers. In others, they publish the total score of the different dairies as well.

Table showing the number of milk licenses issued to city milk dealers for each year from 1906 to 1913. In each case the year ends on July Fourth.

	1906	1907	1908	1909	1910	1911	1912	1913
Number ...	803	1006	1078	1149	1106	1310	1908	2038

Cities	Population	Inspectors
Boone	10,347	M. Healy, M. D.
Burlington	25,741	W. F. Schroeder
Cedar Rapids	32,811	Phil Pray
Clinton	25,577	
Council Bluffs	29,292	Peter Smith
Davenport	43,028	H. J. High
Des Moines	86,368	J. Howard Sasseen
Dubuque	38,494	F. J. Kennedy, D. V. S.
Fort Dodge	15,543	Francis Ludgate
Keokuk	14,008	W. P. Sherlock, M. D.
Iowa City	10,091	C. S. Chase, M. D.
Marshalltown	14,000	C. A. Noggle
Mason City	11,230	A. L. Wheeler, M. D.
Muscatine	16,178	John Tillie, D. V. S.
Ottumwa	22,012	B. W. Van Der Veer
Sioux City	47,848	E. C. Pape
Waterloo	26,693	W. W. Wyant

WORK OF IOWA STATE DAIRY ASSOCIATION.

During the past year the educational department of the Iowa State Dairy Association has carried its work into every section of the state. By means of special trains, creamery meetings, farmers' institutes and other gatherings, the lecturers have addressed 293 audiences and reached over 40,000 dairymen and farmers.

In order to come in contact with as many people as possible in a limited time and complete a tour of all the railroads in the state, the special train was again adopted. By the co-operation of the Chicago & Northwestern and the Minneapolis and St. Louis Railways, 168 meetings were held in less than four weeks. As a means of making the lectures clear and practical, dairy cattle, barn equipment, testing apparatus, etc., were carried and used for demonstration purposes. Special coaches were provided for the women and children. These cars proved very attractive and were always filled to their capacity.

At the completion of these two specials all but 32 towns in which creameries were located had been visited by dairy trains, and fully 185,000 of the 212,000 farmers in the State had had a chance to attend one of these meetings. Of the 99 counties, 94 have been visited and from one to fourteen train meetings held in each. The five counties not reached by this means have each had a number of gatherings which were addressed by lecturers furnished by the Association.

As a result of the growing interest in dairying the farmers' institutes have been giving it a prominent place on their programs. During the winter of 1912-13 thirty-two of these were addressed by representatives of the Association.

Permanent dairy organizations have been fostered in various sections, chief among which is the Fayette County Breeders' Association. This organization is self supporting in every way, and is on a very substantial foundation. By establishing local clubs, the State Association is enabled to carry on its work in a more systematic manner.

Several dairy short courses were also conducted. These were in the older dairy communities where detailed information was required. These were three days in length and instruction in breeding, feeding, testing, dairy cattle judging, etc., was given. Although the special dairy short course was new the attendance was very good at each of those conducted.

The creamery picnic during the summer months has become very popular, and a larger number of these were held during the past year than ever before. Such gatherings are an excellent means of bringing the patrons together in a social way as well as to hear the practical discussion of subjects essential to the improvement of conditions on the farm.

During the spring and fall months when the work is urgent on the farm and it is therefore difficult to hold meetings, bulletins are sent to the local newspapers. These contain timely suggestions which assist the farmer in solving the problems which confront him with reference to his dairy herd. They are written with the idea of assisting the creameries in improving the quantity and quality of the raw product. The newspapers are lending their assistance by giving the information a prominent place in their columns.

One of the most important features of the work has been the establishment of a great dairy show in conjunction with the annual convention. This year the show was unsurpassed by any similar event. It brings dairy cattle breeders with their choice animals from every part of the United States and offers the farmers of not only Iowa but the Mississippi Valley an opportunity to become acquainted with the various breeds. Premiums are offered for butter, cheese and milk which, in addition to the display of dairy appliances and farm implements, bring thousands of prosperous farmers. The convention proper is held in a building on the grounds, and subjects of interest to the buttermakers, creamerymen and dairymen are discussed by authorities of national reputation.

The Iowa State Dairy Association in all of its work has been assisted in a large measure by the other dairy interests of the State. Chief among these is the Dairy and Food Department which had a number of speakers on the trains throughout the tours and also co-operated in all the other work. The individual dairymen have also sacrificed portions of their time to educating their brother farmers in better methods and giving them the benefit of valuable experience. The Dairy Department of the Iowa State College has also given assistance from time to time.

The results of the work, although somewhat slow, are gratifying. Iowa is gradually taking her rightful place among the dairy states. System is being introduced and the unprofitable animals are being replaced by the dairy breeds. The silo is considered a necessity and the legumes are found in many places where formerly less valuable crops grew. The introduction of the pure bred sire, economical feeding and intelligent care are revolutionizing the industry. Following these improvements as a natural sequence come the substantial farm buildings and attractive homes which make a permanent agriculture.

QUALITY OF IOWA CREAM.

The greatest drawback of the Iowa creamery today is the lack of quality in the cream delivered by the patrons. In order to produce good dairy products scrupulous care must be used with all utensils, the cream must be cooled down immediately following separation and delivered as quickly as possible to the place where it is to be manufactured into the finished product. When the dairyman does not exercise proper care in the handling of his product he will eventually be the loser and over the whole state the loss will amount to several millions of dollars during the year.

Generally speaking, at 98 degrees Fr. bacteria multiply one hundred times faster than at 70 degrees Fr. At 32 degrees Fr. bacterial development practically ceases. Milk or cream may be kept sweet a long time at 40 degrees to 45 degrees Fr. because the lactic acid bacteria practically stop growing at these temperatures, but there are other classes of bacteria that can grow at these temperatures, as evidenced by the production of undesirable flavors. Such flavors usually become noticeable after 36 hours and thus the real commercial value of the milk or cream becomes less from that time on.

A great deal of cream is shipped during the year from various points over the State to some central location. It is a common sight at railroad stations during the heated summer season to see cream oozing over the tops of cream cans or doing what we commonly call "boiling over." This "boiling" is caused by the cream being subjected to too high a temperature which allows for very rapid bacterial production, which in this case is a gas producing bacteria. These gas producing bacteria are a species of the lactic acid bacteria which proves that such cream is far advanced in the souring stage.

During the summer months there is a great demand for sweet cream for ice cream making purposes. Due to a shortage of this material, a machine known as the "Homogenizer" is now used by many of the leading ice cream manufacturers. Its purpose is to break up the fat globules into smaller particles. This is accomplished by forcing the cream under high pressure through small openings. The effect of breaking up the fat globules in this way is to give cream more body, give the ice cream a smoother texture, and increase the yield. The cream is usually pumped directly from the pasteurizer into the homogenizer at a temperature of about 130 degrees Fr. From the homogenizer the cream is sent directly over the cooler, the pressure of the machine being sufficient to force the cream to any height desired.

The homogenizer in itself is a good thing but in the hands of unscrupulous manufacturers has materially decreased the quality of the ice cream in this state. Some concerns have found it possible to make a product they call sweet cream from stale, deteriorated butter, skimmed-milk-powder, and water, by running this mixture through the homogenizer. However, it does not make a wholesome and desirable product and should be discouraged by every good dairyman.

ICE CREAM.

With the enactment of an ice cream standard, the department felt that it was no more than right that it should furnish assistance to the various concerns over the state manufacturing this product. The Thirty-fourth General Assembly made a standard which makes the lowest legal limit for fat in plain ice cream, 12 per cent and in fruit and nut ice cream, 10 per cent. This standard for ice cream is fixed by law and is not simply a ruling as seems to still be the impression of some of the small manufacturers.

In regard to our state ice cream standard, the Department has met with some opposition, some claiming that the law is unconstitutional. It is to be hoped that this matter will soon be carried up until its constitutionality is declared, in order that a new law may be framed in case the one that is on the statutes is incorrect. It might be interesting to some who are opposed to the standard to know that we have picked up ice cream samples which have tested as low as four-tenths of one per cent in butter fat. We do not believe that the better class of ice cream manufacturers care to come in contact with manufacturers of such ice cream, and that on careful consideration, they will come to see that not only the public, but themselves are being protected by the enforcement of the ice cream law.

With the idea in mind that the Department acts as an educational factor more than as a prosecuting agency, we are endeavoring to give every assistance to ice cream manufacturers, and to show, if possible, how they may eliminate the guess work from their business, and standardize their cream, in order to secure a uniform product, both in the quality of the ice cream and the per cent of butter fat.

We are convinced more each year that the secret of success in the ice cream business is in service, combined with uniformity of the finished product which is secured by the standardization of raw products. Those desiring to secure information as to how to standardize cream can secure the same from this department by writing for back numbers of the annual report of the Dairy and Food Commissioner or by inquiring directly of the Department for this information.

In order to find out the extent of the ice cream business of the state, we sent out blanks to all of the ice cream manufacturing establishments of the state, requesting them to send us a statement of the amount of ice cream they had manufactured during the past year. This request was very generally complied with, and we are able to state definitely that the amount of ice cream manufactured in the state of Iowa from October 1, 1912, to October 1, 1913, was over 3,000,000 gallons. Not having had figures on the amount made previous to this year, we are unable to state the amount of increase over last year's business, but believe we are safe in saying that the increase has been a material one. Another year we hope to be able to make a comparison.

With 3,000,000 gallons of ice cream as a working basis, and figuring 12 per cent as the average per cent of butter fat in this product, we can say to the producers of the state, that the ice cream industry was responsible for a market of 1,872,000 pounds of butter fat in sweet cream last year. The ice cream industry, in order to secure this sweet cream, was forced to pay a price which would average at least 10 cents over the average price paid for butter fat, amounting to a total of $187,200.00, which amount went into the hands of the dairymen and otherwise might have been diverted into some other channel.

If the butter fat which was made up into ice cream had been manufactured into creamery butter, it would have added 2,246,400 pounds to the amount made in Iowa last year, making a total of approximately 100,000,000 pounds for last year.

We have been urging upon the ice cream makers, the necessity of buying their sweet cream on the butter fat basis, as opposed to buying it by the gallon. Our reports show that nearly one-half of the manufacturers are still buying their cream by the gallon. We wish to impress upon these manufacturers the need of testing all cream for manufacturing purposes, both from the standpoint of business practice and to eliminate the chances for error in making up their product. We find business men, who would not for one moment think of accepting a bill of goods without checking it over, accepting a can of cream with the producer's word, who in nearly every case, has no way of knowing, that it contains a certain amount of butter fat. We have met with case after case, where ice cream has fallen below the standard because the manufacturer relied on the sweet cream testing a certain per cent because of an agreement made with the producer. From a legal standpoint, the producer cannot be held responsible for cream bought by the gallon unless it tests below sixteen per cent, and then the argument is a very weak one as an excuse for ice cream being below standard. We, therefore, urge upon the ice cream manufacturer the necessity for the use of the Babcock Test to determine the value of cream, and in standardizing their product.

The Department has been confronted with the problem of how best to handle homogenized cream, and particularly so, for ice cream purposes. At this time, we feel that the homogenizer and its principles when rightly applied are a great help to the industry. During the summer months when pastures are dry, resulting in a shortage of sweet cream, and the weather is hot, causing a greater demand for ice cream, (64 per cent of the total yearly business being done during the three summer months), the problem of the sweet cream supply is a strenuous one. The homogenizer, creamer, and various types of devices, which are used to re-incorporate butter fat with milk serum, help to give a uniform supply at all seasons of the year.

We regret to state, however, that the system does admit fraud in the way of using low grades of butter, which should not be allowed to go onto the market, in the form of sweet cream, in competition with a strictly first class grade of cream.

The state dairy law in regard to cream is as follows: "Cream is that portion of milk, rich in fat, which rises to the surface of milk on standing, or is separated from it by a centrifugal force, is fresh and clean and contains not less than 16 per cent of milk fat." The food law defines ice cream as "a frozen product made from pure wholesome sweet cream and sugar, with or without flavoring, and if desired, the addition of not to exceed 1 per cent by weight of a harmless thickener, and contains not less than 12 per cent by weight of milk fat and the acidity shall not exceed .3 per cent." The Department holds that cream manufactured from butter by the homogenizing process cannot properly be sold as cream, as defined by the dairy law, and that ice cream manufactured from homogenized cream cannot properly be called "ice cream" as defined in the food law.

Realizing that homogenized products have a place in the ice cream manufacture, in this state (about 40 per cent of those reporting found it necessary to use, at times, homogenized cream) and in order to do away with the practice of using low grade butter in their make-up, and to allow the legitimate use of the homogenizer, the following ruling has been made:

HOMOGENIZED PRODUCTS.

Any product prepared by passing cream through an apparatus which increases its viscosity, and said product contains not less than sixteen per cent of milk fat by weight shall be known and sold under the name "Homogenized Cream."

Any product prepared by passing wholesome milk fat together with milk, skim milk, or skim milk powder, through an apparatus, which will cause the products to unite, forming a product having a semblance of cream, and containing not less than 16 per cent of milk fat by weight, shall be known and sold under the name "Homogenized Process Cream."

Any product prepared in the semblance of ice cream, which has been made in whole or in part from homogenized process cream and said product contains not less than 12 per cent by weight of milk fat, shall be known and sold under the name, "Homogenized Process Ice Cream."

Each container of said homogenized products shall be distinctly and durably labeled with the true name of said product as herein specified, together with the name and place of business of the manufacturer thereof.

Wherever homogenized products are sold at retail, a printed sign or signs shall be conspicuously displayed, giving the true name of the product as herein specified, followed by the words, "Used Here" or "Sold Here." All of said words shall be printed on white cards, using black letters, not smaller than 72 point, heavy face, Gothic caps (standard line). No other printed matter of any kind shall appear on this card.

HOMOGENIZED PROCESS
ICE CREAM
SOLD HERE

Letters to be 72-point, heavy face Gothic caps.

By conforming to this ruling it is possible to admit of the use of the homogenizer, the public will be able to know what it is getting, and the department will know who is manufacturing these products and will be able to go to their places of business and inspect the butter which is used for manufacturing homogenized cream. *Butter which is made from cream which previous to its ripening could not be used as sweet cream should not be used in manufacturing homogenized products.*

Outside of the sweet cream supply, perhaps the greatest problem that the ice cream manufacturer has to deal with and one which is a source of large annual loss, is the deplorable habit the retailers have drifted into, of not properly cleaning and drying ice cream containers and returning them promptly.

We regret the fact that a bill which dealt specifically with the subject of cleaning ice cream containers failed to receive favor in the eyes of the Thirty-fifth General Assembly. However, we have been endeavoring to secure relief by interpreting a section of the Sanitary Law, which did pass, to include ice cream containers. The Section reads as follows: "That receptacles used in connection with the distribution of a food product shall be kept clean at all times."

Of those reporting on the condition of returned ice cream containers, since the enactment of the Sanitary Law, 60 per cent report distinctly no change for the better; 40 per cent report that they have noticed containers are coming back in better condition than they were previous to that time. This report of the 40 per cent is particularly gratifying to the Department in view of the fact that there is nothing specific in the law to cover this phase of the ice cream manufacturer's trouble, and we feel that with this 60 per cent as a basis of comparison, the Department should be in a position to more forcibly impress on the minds of the legislators, the need of particular legislation along this line at their next session.

In order to get the attitude of the ice cream manufacturers, we asked for an expression, in regard to having made punishable by a fine, the neglect in washing ice cream containers thoroughly as soon as emptied. Almost without exception reports came in favoring such a measure. The Department is very much in favor of a law that will enforce the cleaning of containers as soon as emptied, first, from a sanitary standpoint; second, because there is a great deal of loss to the ice cream factory, due to the fact that cans rust out and become absolutely useless on account of retailers failing to clean them when emptied; third, because we believe that if consumers come to realize that it is a misdemeanor, punishable by fine to have dirty containers in their possession, they will take more pains to clean the can and return it promptly, and that it will also result in transportation companies being more careful to return containers as soon as they came into their possession.

We are pleased to state to the public that in the last few years, the last two in particular, the ice cream makers have voluntarily made great improvements in the sanitary conditions in and surrounding their factories. We believe that the ice cream makers are making more rapid strides toward sanitary and inviting conditions than any other branch of the food manufacturing industry.

We are sorry to state that there are still some conditions existing, which unless they are righted, will make it necessary to start prosecution. and eventually revoke the licenses of the factories in which such conditions exist. A few of the clauses of the Sanitary Law, with which ice cream manufacturers, as well as creameries, are expected to comply, are as follows:

(1) "The floors, side walls, ceilings, furniture, receptacles, implements, and machinery of every establishment or place where food is manufactured, shall at all times be kept in a clean, healthful, and sanitary condition, and for the purpose of this act unclean, unhealthful and insanitary conditions shall be deemed to exist unless food in the process of manufacture is securely protected from flies, dust, dirt, and as far as may be necessary by all reasonable means from all other foreign and injurious contamination, and unless the refuse, dirt, and the waste products, subject to decomposition and fermentation, incident to the manufacture are removed daily, and unless all other receptacles, tables, utensils, and machinery used in mixing and all other processes, are kept thoroughly cleaned, and unless the clothing of the operators, employees, or other persons, therein employed, is clean."

(2) "The side walls and ceilings shall be washed clean and every building room. basement or cellar occupied or used for the preparation. manufacture, or distribution of food, shall have an impermeable floor, made of cement or tile laid in cement, grouted brick, wood or other suitable, non-absorbent material, which can be flushed and washed clean with water."

(3) "The doors. windows, and other openings of every food-producing or distributing establishment during the fly season shall be fitted with self-closing screen doors, and wire window screens of not coarser than 14-mesh wire gauze."

(4) "Operatives, employes, clerks, and all persons who handle the material from which food is prepared or the finished product, before beginning work or after visiting toilet or toilets, shall wash their hands and arms thoroughly in clean water."

(5) "Cuspidors for the use of operatives, employes, clerks, or other persons shall be provided whenever necessary, and each cuspidor shall be thoroughly emptied and washed daily with disinfectant solution and five ounces of such solution shall be left in each cuspidor while it is in use. No operative, employe or other person shall expectorate within any building, room, base-

ment or cellar where the production, manufacture, packing, storing, preparation or sale of any food is conducted except in cuspidors as provided for herein."

This Department believes that with the improvement of the conditions surrounding the manufacture of ice cream the growth of consumption will keep pace, and it aims to make Iowa Ice Cream carry with it the assurance that it is made under sanitary conditions and is of uniform high quality.

CHEESE INDUSTRY.

The number of cheese factories in Iowa has increased during the past year and the amount of cheese made shows a material increase. The factories reporting show a total output of 555,371 pounds (an increase of 208,915 pounds over last year) and report having paid $74,704 for raw material. One factory reporting last year has closed its doors and four new plants were built during the year. The percentage of increase in the amount of cheese manufactured is larger than the percentage of increase in the amount of creamery butter manufactured. This would indicate that some Iowa dairymen are finding a profitable market for milk in the cheese factories of the state and this encourages us to believe that in time Iowa may enjoy a reputation as a cheese producing state. This department stands ready to give any assistance that we can in promoting the organization of companies or associations for the manufacture of cheese.

PRICE RECEIVED FOR BUTTER.

The average quotation for extra creamery butter on the New York market shows a decided increase over the year ending October 1, 1912, being 32.41 cents per pound. This shows a gain of 1.21 cents over the previous year and while it is a material increase in price, it is probably no greater than the increase in the price of other articles of food for the period covered. Taking into account the large quantities of oleomargarine consumed, it might be expected that the price of butter would be to some extent affected by the sale of this product but the figures indicate that consumers of butter have not in any large degree been led to use butter substitutes.

Figures received from the 512 creameries show that the amount received from the sale of 96,953,183 pounds of butter on the market was $28,285,249. This shows that the average price received was 33.92 cents per pound and from these reports we assume that the butter on the average sold for 1½ cents per pound above the quotation for creamery extras. The price received for the creamery product furnishes ample proof that the creamery is one of the best markets offered the farmer for the disposal of his produce.

SHOWING AVERAGE MONTHLY PRICE OF EXTRA CREAMERY BUTTER IN NEW YORK MARKET.

Month	Twelve months ending Oct. 1, 1902	Twelve months ending Oct. 1, 1903	Twelve months ending Oct. 1, 1904	Twelve months ending Oct. 1, 1905	Twelve months ending Oct. 1, 1906	Twelve months ending Oct. 1, 1907	Twelve months ending Oct. 1, 1908	Twelve months ending Oct. 1, 1909	Twelve months ending Oct. 1, 1910	Twelve months ending Oct. 1, 1911	Twelve months ending Oct. 1, 1912	Twelve months ending Oct. 1, 1913
October	$.2200	$.2362	$.2100	$.2095	$.2184	$.2611	$.2915	$.2673	$.3064	$.2996	$.3044	$.3129
November	.2412	.2650	.2317	.2481	.2350	.2762	.2725	.2957	.3095	.3117	.3391	.3446
December	.2510	.2920	.2423	.2688	.2480	.3164	.2887	.3131	.3490	.2966	.3679	.3727
January	.2425	.2762	.2270	.2910	.2650	.3080	.3069	.3152	.3344	.2639	.3810	.3518
February	.2862	.2600	.2517	.3218	.2709	.3254	.3233	.3009	.2964	.2611	.3114	.3639
March	.2810	.2860	.2452	.2807	.2700	.3061	.2840	.2953	.3263	.2391	.3064	.3677
April	.2825	.2725	.2284	.3008	.2188	.3069	.2855	.2768	.3113	.2111	.3235	.3459
May	.2275	.2200	.2012	.2371	.2017	.2501	.2369	.2658	.2843	.2187	.3043	.2861
June	.2195	.2160	.1803	.2049	.2022	.2360	.2329	.2581	.2792	.2499	.2731	.2781
July	.2131	.2012	.1767	.2056	.2062	.2481	.2243	.2623	.2831	.2510	.2713	.2702
August	.1990	.1940	.1793	.2111	.2257	.2488	.2285	.2719	.2938	.2631	.2663	.2798
September	.2170	.2075	.1947	.2068	.2462	.2781	.2388	.3013	.2989	.2655	.2976	.3157
Av. value per lb. per year	$.2400	$.2438	$.2140	$.2489	$.2340	$.2759	$.2762	$.2848	$.3060	$.2609	$.3121	$.3241

TABLE NO. II.

Table Showing Number of Pounds of Milk Received, number of Pounds of Cream Received, Pounds of Butter Made and Pounds Sold in Iowa and Outside the State so far as Reported by the Creameries.

Counties	Number reporting	Pounds of milk received	Pounds of cream received	Pounds of butter manufactured	Pounds sold to patrons	Pounds sold in Iowa	Pounds sold outside the state
Adair	3	91,730	1,793,358	651,707	30,884	38,368	582,455
Adams	1	-----	331,250	119,526	3,395	6,580	109,551
Allamakee	8	-----	7,068,460	1,961,370	36,218	102,971	1,822,181
Appanoose	-----	-----	-----	-----	-----	-----	-----
Audubon	8	-----	2,655,301	1,044,093	92,161	30,979	920,953
Benton	7	-----	1,671,482	586,980	5,531	101,388	480,061
Black Hawk	14	27,707,404	3,114,751	2,210,396	278,702	319,014	1,612,680
Boone	4	667,595	363,158	294,719	9,294	80,107	205,318
Bremer	25	73,370,896	840,963	3,115,716	333,459	108,887	2,673,370
Buchanan	10	17,496,152	2,837,286	1,335,208	107,177	152,436	1,075,595
Buena Vista	6	42,964	2,615,915	1,199,898	23,424	80,086	1,096,388
Butler	14	9,898,600	3,868,696	1,544,957	96,569	78,594	1,369,794
Calhoun	5	437,822	2,827,934	1,076,277	17,834	25,383	1,033,060
Carroll	9	142,372	1,953,692	721,604	20,367	88,336	612,901
Cass	2	-----	1,445,124	489,760	1,231	86,552	401,977
Cedar	5	-----	912,367	375,878	19,804	216,722	139,352
Cerro Gordo	7	1,484,959	5,237,346	1,614,680	34,580	240,130	1,339,970
Cherokee	2	-----	435,201	156,658	2,662	77,191	76,805
Chickasaw	12	21,676,725	4,809,048	2,555,451	175,283	96,474	2,283,694
Clarke	-----	-----	-----	-----	-----	-----	-----
Clay	8	649,115	2,175,324	790,371	38,837	30,483	721,051
Clayton	15	15,338,768	8,925,676	3,271,509	99,700	163,072	3,008,737
Clinton	6	162,179	2,083,116	1,244,723	19,145	45,061	1,180,517
Crawford	1	180,913	394,098	165,399	10,917	-----	154,482
Dallas	3	5,053,000	945,471	333,622	7,269	214,898	111,455
Davis	1	-----	202,560	74,928	-----	9,360	65,568
Decatur	1	18,000	1,420,202	441,014	-----	9,061	431,983
Delaware	15	34,553,974	7,588,933	3,363,270	204,909	216,056	2,942,305
Des Moines	1	-----	82,000	23,157	240	7,890	15,027
Dickinson	5	117,517	4,058,081	853,828	20,391	32,162	801,275
Dubuque	17	2,747,767	8,307,387	3,013,823	85,458	482,768	2,445,597
Emmet	5	1,679,657	1,594,945	560,088	36,314	35,496	488,278
Fayette	21	40,602,557	7,038,993	3,905,568	264,555	197,544	3,443,469
Floyd	4	18,908	2,072,051	837,885	60,554	389,380	387,951
Franklin	8	13,711	3,902,372	1,182,797	66,531	40,055	1,076,211
Fremont	1	-----	121,299	55,259	200	7,467	47,592
Greene	1	114,347	332,698	134,730	5,487	27,773	101,470
Grundy	7	1,334,149	3,103,872	1,004,569	51,984	23,177	929,408
Guthrie	5	50,131	2,126,753	724,485	45,368	56,428	622,689
Hamilton	5	1,719,868	1,310,746	421,611	41,834	27,899	351,878
Hancock	7	-----	4,437,072	1,422,159	53,374	33,370	1,335,415
Hardin	8	437,144	4,108,844	1,411,282	90,927	99,269	1,221,086
Harrison	1	250,000	400,590	149,019	24,019	100,000	25,000
Henry	-----	-----	-----	-----	-----	-----	-----
Howard	9	1,878,030	9,610,573	1,817,973	68,046	256,132	1,493,795
Humboldt	6	187,200	2,780,932	861,871	30,402	17,431	814,038
Ida	1	-----	560,000	200,000	1,050	66,500	132,450
Iowa	8	-----	1,653,568	532,192	47,240	32,902	452,050
Jackson	12	724,888	5,055,386	1,719,645	40,218	99,538	1,579,889
Jasper	2	545,752	484,478	180,624	13,403	37,518	129,703
Jefferson	1	-----	312,000	104,000	-----	88,000	16,000

TABLE NO. II.—CONTINUED.

Counties	Number reporting	Pounds of milk received	Pounds of cream received	Pounds of butter manufactured	Pounds sold to patrons	Pounds sold in Iowa	Pounds sold outside the state
Johnson	1	100,000	50,000	10,000	4,000	6,000	----------
Jones	7	1,571,658	5,893,941	1,843,072	81,828	115,033	1,646,211
Keokuk	2	----------	257,600	79,200	1,000	40,000	38,200
Kossuth	18	2,088,518	6,587,549	2,220,572	212,395	118,690	1,889,487
Lee	1	----------	6,000,000	767,110	----------	38,350	728,760
Linn	10	2,391,472	5,728,388	2,033,660	57,581	479,086	1,496,993
Louia	1	----------	64,874	22,430	1,840	4,610	15,980
Lucas	----	----------	----------	----------	----------	----------	----------
Lyon	3	----------	1,986,633	668,646	800	17,428	650,418
Madison	----	----------	----------	----------	----------	----------	----------
Mahaska	1	----------	718,960	239,656	----------	----------	239,656
Marion	1	106,790	323,147	118,147	----------	11,940	106,207
Marshall	4	75,740	1,692,040	667,838	22,268	140,203	505,367
Mills	1	----------	62,411	74,313	1,340	37,316	35,657
Mitchell	7	89,552	4,294,947	1,326,796	92,471	188,390	1,045,935
Monona	2	----------	208,655	74,598	2,548	3,424	68,626
Monroe	1	----------	316,000	87,000	500	50,000	36,500
Montgomery	----	----------	----------	----------	----------	----------	----------
Muscatine	----	----------	----------	----------	----------	----------	----------
O'Brien	5	80,025	1,975,608	687,071	32,365	79,606	575,100
Osceola	5	----------	1,462,972	479,935	19,374	25,181	435,380
Page	1	312,000	1,633,860	544,254	250	59,103	484,901
Palo Alto	11	6,219,430	4,222,727	1,537,743	146,735	151,575	1,239,433
Plymouth	4	216,272	1,057,482	347,758	9,165	91,032	247,561
Pocahontas	5	5,000	1,098,511	381,375	21,642	15,283	344,450
Polk	3	520,000	11,856,202	4,030,103	----------	1,891,839	2,138,264
Pottawattamie	1	----------	2,799,964	981,673	----------	228,525	753,148
Poweshiek	6	93,971	901,779	318,211	5,352	121,625	191,234
Ringgold	----	----------	----------	----------	----------	----------	----------
Sac	5	34,720	1,583,616	581,772	18,532	23,902	539,338
Scott	3	14,664	540,083	549,571	344	186,542	362,685
Shelby	6	----------	1,179,887	438,846	20,250	19,790	398,806
Sioux	9	13,943	4,820,848	1,739,821	24,030	62,740	1,652,551
Story	8	156,480	2,636,244	891,423	90,248	104,540	696,635
Tama	5	12,000	1,011,783	346,788	15,808	76,960	254,020
Taylor	2	----------	2,548,160	854,381	14,440	44,320	795,621
Union	2	----------	1,337,990	585,962	5,121	31,786	549,055
Van Buren	----	----------	----------	----------	----------	----------	----------
Wapello	3	150,000	3,592,248	1,197,057	----------	356,017	841,040
Warren	----	----------	----------	----------	----------	----------	----------
Washington	1	600,000	----------	----------	----------	----------	----------
Wayne	3	----------	2,262,210	799,433	5,700	61,805	731,928
Webster	3	----------	1,271,661	434,590	2,339	194,964	237,287
Winnebago	8	8,445,302	4,391,641	1,713,737	119,610	51,099	1,543,028
Winneshiek	11	----------	8,405,149	2,479,792	37,331	137,813	2,304,648
Woodbury	2	127,648	26,8[illegible]5,741	10,726,252	9,030	666,875	10,050,347
Worth	9	27,735	4,441,512	1,405,635	68,263	32,285	1,305,087
Wright	7	14,189	2,723,111	811,153	32,156	80,387	698,610
Total	515	285,197,255	262,742,586	96,953,183	3,893,603	10,822,952	82,236,628

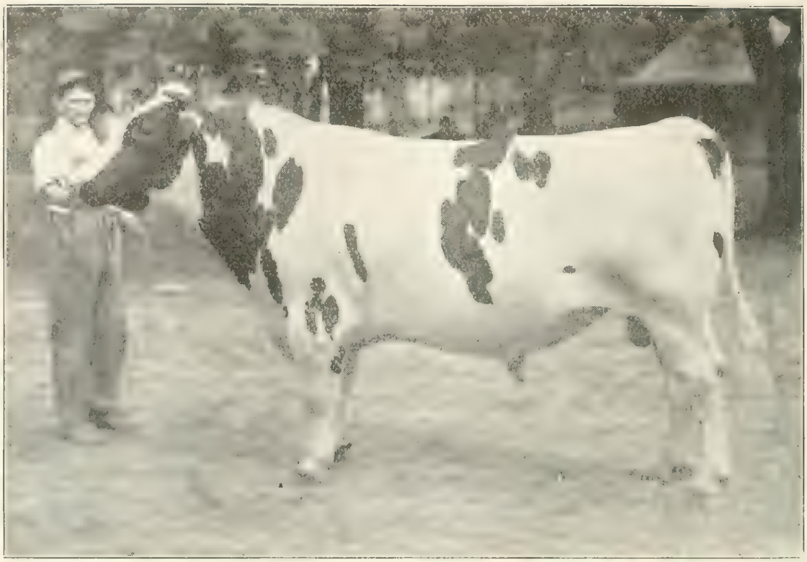
TABLE NO. III.

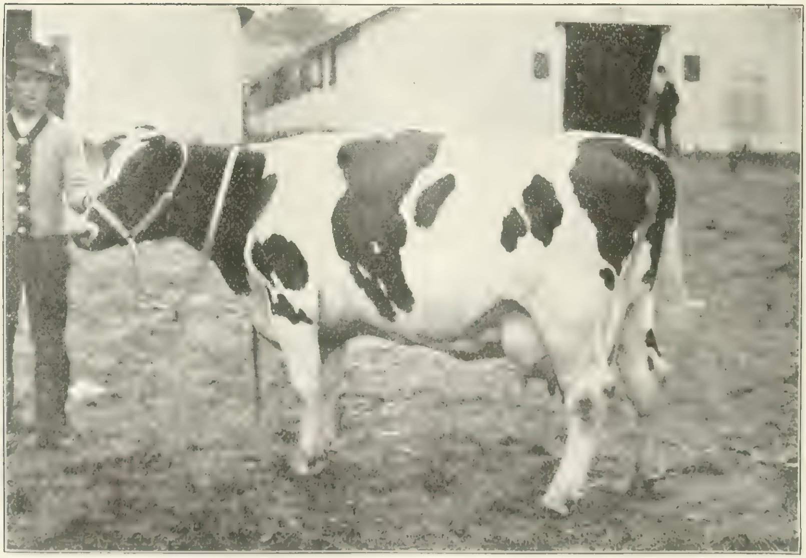
Table Showing Number of Hand Separators, Number of Patrons and Number of Cows.

Counties	Receive cream by rail	No. of creameries reporting hand separators	Hand separators reported	No. of patrons reported	No. of cows reported
Adair	1	3	769	800	4,990
Adams		1	180	205	1,476
Allamakee		8	1,713	1,781	14,687
Appanoose					
Audubon		8	1,191	1,201	8,693
Benton		7	821	833	5,222
Black Hawk	1	12	1,014	1,790	14,016
Boone		4	139	483	3,028
Bremer		6	315	3,284	26,475
Buchanan		9	692	1,915	9,900
Buena Vista	1	6	1,459	1,445	9,631
Butler		14	1,251	1,791	12,741
Calhoun	1	5	2,027	2,027	11,500
Carroll		7	1,264	1,284	6,651
Cass		2	848	848	4,980
Cedar	2	6	611	615	3,625
Cerro Gordo	2	7	1,445	1,950	10,289
Cherokee		2	3[illegible]5	443	3,148
Chickasaw		10	1,313	2,035	17,633
Clarke					
Clay		8	881	936	6,054
Clayton	1	14	3,996	5,216	24,274
Clinton	3	6	2,561	2,583	12,045
Crawford	1	1	160	165	1,155
Dallas	2	2	460	667	4,335
Davis	1	1	200	250	825
Decatur	1	1	430	441	987
Delaware	1	14	2,006	2,583	21,532
Des Moines		1	35	70	490
Dickinson	1	5	938	948	6,307
Dubuque	4	17	3,512	3,574	26,855
Emmet		5	378	408	3,667
Fayette	1	14	1,834	3,064	24,878
Floyd		4	685	966	6,356
Franklin	1	8	1,123	1,481	10,703
Fremont		1	90	90	450
Greene		1	212	219	1,533
Grundy		7	912	956	7,129
Guthrie		5	888	1,122	6,108
Hamilton		5	753	812	4,498
Hancock		7	1,277	1,277	10,504
Hardin	1	8	1,359	1,417	9,033
Harrison		1	200	300	2,100
Henry					
Howard		9	1,536	1,726	32,615
Humboldt	1	6	2,310	1,591	10,805
Ida		1	180	225	900
Iowa		8	627	640	4,318
Jackson	1	12	1,643	1,718	13,489
Jasper		2	235	276	1,750
Jefferson	1	1	120	150	1,050
Johnson		1	20	20	100
Jones		7	1,703	1,733	13,837

TABLE No. III.—CONTINUED.

Counties	Receive cream by rail	No. of creameries reporting hand separators	Hand separators reported	No. of patrons reported	No. of cows reported
Keokuk	1	2	87	94	658
Kossuth		18	1,925	1,997	14,617
Lee	1	1	2,000	2,000	12,000
Linn	2	10	2,273	2,606	17,454
Louisa		1	75	82	400
Lucas					
Lyon	1	3	660	710	5,110
Madison					
Mahaska	1	1	239	239	1,673
Marion		1	280	365	1,420
Marshall	1	4	765	862	4,839
Mills		1	100	100	300
Mitchell		7	1,090	1,520	9,836
Monona		2	200	200	1,397
Monroe		1	160	160	900
Montgomery					
Muscatine					
O'Brien		5	842	869	6,220
Osceola		5	500	1,186	3,427
Page	1	1	997	1,210	7,260
Palo Alto		11	1,257	1,456	11,133
Plymouth		4	569	580	3,618
Pocahontas		5	569	593	3,794
Polk	3	3	4,549	4,749	29,243
Pottawattamie	1	1	880	981	6,867
Poweshiek	1	6	847	882	5,795
Ringgold					
Sac		5	825	893	5,386
Scott	2	3	600	690	4,670
Shelby	1	6	869	869	4,879
Sioux		9	2,169	2,166	13,518
Story		8	1,032	1,045	6,490
Tama		5	481	562	3,709
Taylor		2	1,550	1,628	11,050
Union	1	2	685	710	4,870
Van Buren					
Wapello	3	3	1,193	1,196	8,372
Warren					
Washington				29	203
Wayne	1	3	1,950	2,812	10,742
Webster	1	3	601	601	3,320
Winnebago		8	1,099	1,321	9,773
Winneshiek		11	2,076	2,377	18,815
Woodbury	3	5	11,324	11,324	79,268
Worth		9	1,037	1,590	8,767
Wright		7	923	946	7,071
Total	55	480	99,919	116,554	788,491





Two Prize Winning Holsteins at the Iowa State Fair and Exposition.

PART VIII.

Proceedings of the Thirty-seventh Annual Convention of the Iowa State Dairy Association.

Iowa Falls, Iowa, April 1, 1914.

The 37th annual convention of the Iowa State Dairy Association, held at Waterloo, on October 15th and 16th, in connection with the Dairy Cattle Congress, was not the success it has been in former years, so far as the convention sessions were concerned. On the other hand, never in the history of the association has there been so many dairymen assembled as this year. There was the greatest array of pure bred dairy cattle of all breeds ever shown in the state, and this proved of much greater attraction than the convention. Owing to this, and other attractions on the grounds, it proved a very difficult matter to hold the sessions as outlined in the program. However, those who did attend manifested great interest in the few talks, and the convention can in no way be considered a failure.

The first session was called to order Wednesday forenoon at 10:30 o'clock by President Quarton.

Invocation was given by Dr. H. W. Reherd, pastor of the First Presbyterian Church.

The address of welcome was made by Hon. H. O. Bernbrock, who in his characteristic way put everybody in good humor and made them feel at home in Waterloo. "Waterloo is the center and home of dairying in Iowa, and, therefore, when you dairymen come here we want you all to feel that this is your home and to make yourself at home," he said. Like all Waterloo boosters, he reviewed the past growth of the city and pointed out, with considerable pride, the fact that the great Dairy Cattle Congress was born and raised in Waterloo, and that Waterloo owed the Iowa State Dairy Association for it.

President Quarton's remarks were brief, but effective. He paid a high tribute to his co-workers, the other officers of the association, whom he praised for the good work they have done during the past for the organization and for Iowa's dairy industry.

Mr. Quarton reviewed the activities of the association during the year and pointed to several new dairy laws which the organization has been instrumental in placing on the statute books and which would be of great benefit to the dairy and creamery men. The very foundation is the cow, said Judge Quarton, but the farmers must depend on the buttermakers to make butter that will bring the right price in the markets. He complimented the latter on the fine showing made in the past and especially on the excellent quality of the exhibit at this convention and urged them to send butter to the National convention of the same quality and so capture the prize banner for Iowa.

"The man behind the cow," said Mr. Quarton, "the buttermaker in the factory, and the manufacturers of creamery machinery, have been keeping pace with the procession of progress and advancement, and will continue to improve and progress until the time comes that Iowa will be recognized as the greatest dairy state in the Union. But we must not forget that we are as much dependent upon the man in the creamery as we are upon the cow, and that we must work hand in hand to make the progress and advancement which we desire."

Following Judge Quarton, the secretary, J. J. Ross, of Iowa Falls, made his report as follows:

SECRETARY'S REPORT.

Owing to the lateness of the hour and as there is a great deal of work to be done I will be as brief as possible with my report, but I do want at this time to thank each and every one who gave so liberally of their time and money for the success of this convention. We, the officers of the Iowa State Dairy Association, certainly appreciate the help that has been given us by the dairy press, and by Mr. Barney's department and the dairy department at Ames and we wish especially to thank the commission men for their liberal support and also the railroad men, and in fact all who contributed in any way to the success of this convention, for I realize that without your help and support we could not have been so successful in pulling off so great a convention. I also wish to thank the buttermakers of Iowa for the grand showing that we have in the butter exhibit. I want to assure you that in all of my experience in handling butter contests that this exhibit is by far the best that I have ever seen. There are one hundred sixty-nine tubs of butter entered. This number is larger than ever before since I have been your secretary, the quality is very fine and I am sure that when you hear the criticism by the critic that you will not be disappointed. I want to congratulate the buttermakers of the state upon their rapid advancement in improving the quality of butter. There have been held since the last meeting of the members of the association, two meetings of the executive committee. The first was held at Ames during the short course last winter. The meeting was held on January 10th, for the purpose of installing the newly elected officers of the association. Other business which was taken up at that time was the arrangement to assist Mr. E. S. Estel, state dairy expert, by giving him authority to hire such assistance as was neccessary to conduct a special dairy train during the winter.

The other meeting was held at Ames on June 10th, and the business transacted at this meeting was to select a place for holding our 1913 convention. After reading several propositions and invitations from different places it was unanimously agreed to meet with the Dairy Cattle Congress at Waterloo during the week of October 13-18, 1913, as your committee believed the offer from Waterloo was by far the more desirable. I'm sure that after seeing the attractions which there are here and the accommodations provided that you will agree that we made a wise selection.

With reference to the work of the state dairy expert will say that the work has been carried along very satisfactorily to the State Dairy Board, there have been two very successful trains run over the Minneapolis and St. Louis railroad and one over the Chicago and North Western R. R. The total number of farmers and dairymen who have visited these trains is about forty thousand. Besides the special trains the expert and his assistants have been asked to speak at fifty-six farmers' institutes and a great many creamery and dairy picnics. Altogether, we think that this feature of the work of the association is very satisfactory and in our opinion there is more real good being accomplished through the appropriation to this cause than any like appropriation in the state. In connection with this thought I would urge every one interested to assist in every way possible to have this appropriation increased at the next session of our legislature.

Just a word with reference to the creamery beautiful contest which was originated by Professor Mortensen and which is being conducted by this association. This being the first year of this work we did not expect any great results but we are surely very well pleased with the interest which is being taken in this work. There are at this convention ten entries from that number of creameries who are competing for the prizes offered and I can assure you that in every instance there is a wonderfully improved condition about the various creameries brought about through these contests. It is the object of the association to continue these contests from year to year until this spirit of beautifying the creamery grounds both inside and out becomes universally adopted.

In conclusion I want to again thank you all for the support which you have given me during the past year.

REPORT OF TREASURER.

For the year ending September 30, 1913.

RECEIPTS.

Oct. 22, 1912—Membership, Waterloo convent'n	$ 372.25
Oct. 30, 1912—Membership, Waterloo convent'n	70.00
Nov. 4, 1912—Beatrice Creamery Co.	5.00
Nov. 4, 1912—Chr. Hansen's Laboratory	10.00
Nov. 4, 1912—Pitt, Barnum & Co.	5.00
Nov. 4, 1912—Douglas & Co.	5.00
Nov. 4, 1912—W. D. Collyer & Co.	10.00
Nov. 4, 1912—Creamery Package Mfg. Co.	15.00
Nov. 4, 1912—J. G. Cherry Co.	10.00
Nov. 4, 1912—Coyne Bros.	5.00
Nov. 4, 1912—Great Atlantic & Pacific Tea Co., Sale of convention butter, 3,190 lbs.	1,028.78
Nov. 4, 1912—Wells & Richardson Co.	10.00
Nov. 4, 1912—Iowa Dairy Separator Co.	10.00
Nov. 4, 1912—Memberships	3.00
Nov. 4, 1912—Waterloo Dairy Cattle Congress	600.00
Nov. 4, 1912—H. G. Van Pelt, (return of dairy train money advanced)	300.00
Dec. 20, 1912—Fitch, Cornell & Co.	5.00
Dec. 20, 1912—B. F. Britten & Co.	5.00
Dec. 20, 1912—J. B. Ford Co. (Wyandotte)	10.00
Dec. 20, 1912—De Laval Separator Co.	15.00
Dec. 20, 1912—International Harvester Co.	15.00
Dec. 20, 1912—Geo. M. Baer & Co.	10.00
Dec. 20, 1912—Gallagher Bros.	10.00
Sept. 18, 1913—Hunter, Walton & Co.	5.00
Sept. 18, 1913—Gude Bros.	10.00
Sept. 18, 1913—Memberships (J. J. Ross)	40.00
Sept. 18, 1913—To correct bank balance	5.35
On hand October 1, 1912	1,346.13
Total resources	$3,993.51

DISBURSEMENTS.

Oct. 2, 1912—Postmaster, stamps	$ 2.00
Oct. 10, 1912—Irving Hotel, committee meals	4.70
Oct. 14, 1912—E. T. Sadler, traveling expense	2.00
Oct. 15, 1912—Waterloo Furniture Co., booth furniture	2.00
Oct. 15, 1912—Prof. Carl E. Lee, traveling expense	18.25

Oct. 15, 1912—T. E. Culp, traveling expense...	20.00
Oct. 17, 1912—J. J. Ross, pro rata money....	880.00
Oct. 19, 1912—J. J. Ross, salary and expenses..	265.75
Oct. 19, 1912—O. F. Courbat, pro rata money..	4.50
Oct. 19, 1912—Cobb & Leslie, gold and silver medals	66.00
Oct. 19, 1912—E. T. Sadler, reporting and clerical	100.00
Oct. 19, 1912—U. S. Express, express on butter.	13.96
Oct. 19, 1912—Wells, Fargo Express Co., exp. on butter	21.80
Oct. 21, 1912—Crowther Printery, envelopes (Chk. No. 39)	3.00
Oct. 21, 1912—American Express Co., exp. on butter	22.04
Oct. 22, 1912—Artificial Ice Co., butter refg....	12.40
Oct. 22, 1912—A. J. Anderson, Otisco, Minn. (Comp. butter)	6.00
Oct. 22, 1912—H. H. Whiting, Cedarburg, Wis. (Comp. butter)	6.06
Oct. 22, 1912—J. R. Bloomquist, North Branch, Minn. (Comp. butter)	5.85
Oct. 22, 1912—C. Christiansen, Ft. Ripley, Minn. (Comp. butter)	5.77
Nov. 4, 1912—Prof. Mortensen, convention expense	11.45
Nov. 4, 1912—W. H. Chapman, convention expense	5.55
Nov. 6, 1912—Chamberlain Hotel Co. committee exp.	8.35
Nov. 9, 1912—Executive Committee, expense (Des Moines)	6.45
Nov. 11, 1912—E. C. Lytton, convention expense	15.34
Nov. 12, 1912—Fred L. Kimball Co., printing..	264.36
Nov. 13, 1912—Stroebel Music House, piano rent	6.50
Nov. 15, 1912—Successful Farming, subs. to members	4.50
Nov. 15, 1912—Iowa Farmer, subs. to members	3.00
Nov. 22, 1912—Bradley Transfer Co., hauling butter	2.75
Dec. 2, 1912—E. S. Estel, loan for dairy train exp.	250.00
Nov. 27, 1912—Kimball's Dairy Farmer, subs. to members	46.75
Nov. 27, 1913—St. Louis Button Co., 1912 badges	36.87
Nov. 27, 1912—Bastian Bros., 1912 fobs......	51.21
Nov. 27, 1912—O. C. Cobb, medals and engraving	9.00

Nov. 27, 1912	Kimball's Dairy Farmer, mailing and stamps	23.20	
Nov. 27, 1912	Chamberlain Hotel, committee exp.	8.35	
Jan. 2, 1913	J. S. Anderson & Son, Treasurer's bond	12.00	
Jan. 8, 1913	Fred L. Kimball Co., print and stamps	14.50	
Jan. 8, 1913	Creamery Package Mfg. Co., prize triers	15.00	
Jan. 8, 1913	J. J. Ross, stamps and expense	13.76	
Jan. 8, 1913	Cressey & Wingate, decorating booth	10.00	
Jan. 9, 1913	E. T. Sadler, committee expense	10.00	
Mar. 21, 1913	Roland, McCurdy Co., medals for 8-mo. cont.	87.00	
Apr. 3, 1913	Kimball's Dairy Farmer, 10 subs.	2.50	
Jun. 9, 1913	E. T. Sadler, committee expense	15.00	
Jun. 30, 1913	E. S. Estel, salary for Apr., May and June	75.00	
Aug. 2, 1913	E. S. Estel, salary for July	25.00	
Sept. 15, 1913	E. S. Estel, salary for August	25.00	
Sept. 11, 1913	F. L. Kimball Co., printing	50.00	
	Money on interest	1,000.00	
	Total		$3,570.56
	Balance on hand October 1, 1913		$ 422.95

E. T. SADLER, Treas.

Following the reading and adopting of the treasurer's report, Prof. Mortensen, of Ames, was introduced and made an address on "The Creamery Employee." He said:

THE CREAMERY EMPLOYEE.

When speaking on the subject of the "The Creamery Employee" it shall be the object to consider all of those employed by the creamern association. This will include the manager and secretary as well as the buttermaker and the helper, for leaving out of consideration the difference between their requirements along technical lines, other requirements for all employees are identical.

The first prerequisite for a successful creamery employee is integrity. There is no place where there is greater demand for integrity than in the creamery business. The buttermaker that is wanted today is the man who will credit his patrons with correct weights and with correct tests, the man who puts 16 ounces of butter into the pound and who refuses to ship from the creamery butter containing 16 per cent or more of moisture. Likewise we are looking for creamery proprietors who will encourage honesty among their employees, who do not discriminate in prices, who are satisfied when they obtain a reasonable profit on their investment, men who are not selling stock for $100 per share when they know that it is worth only half of that amount. The man who will attain real success today in any walk of life is the one who is able to look his fellow man straight in his eye and speak to him in tones that ring with the voice of truth. It is the man of character who is in demand.

It is told that the proprietor of a Boston dry goods store one day came to a clerk and asked: "Why did you not sell something to the lady who just left the store without purchasing?" "Because," said the clerk, "she asked for Middlesex and we did not have it." "Why did you not show her the next pile and tell her that was Middlesex?" "Because it was not so, sir," said the clerk. "You are too mighty particular for me," exclaimed the proprietor. "Very well," said the boy, "if I must tell a lie to keep my place, I will go." The clerk became a wealthy respected merchant in the west. Such a character is the strongest foundation upon which the cream employee may build a reputation which leads to permanent success.

The creamery employee should disregard personal advantages and work solely for the interest of the creamery and its patrons. The creamery buttermaker, manager and secretary are as a rule high class men, men who would not wilfully wrong anyone but sometimes without second thought they are apt to recommend a good friend or a relative for a more or less responsible position in the creamery. This is perhaps done because the one recommended is considered to be an able man, one who is able to earn every cent of the salary offered. It is true, however, that an employee who is placed in his position by a friend or relative is often likely to deliver less than is represented by his original efficiency and it is therefore to be preferred that the employees are not connected with their superiors by friendship or relation ties.

Although there are many qualities which a creamery employee should possess, that of integrity is the fundamental one. There is a relation between character and personal appearance. A person of clean character has an open honest face with eyes that meet yours. Words spoken from his mouth are clean and as a rule he wears clean clothing. Punctuality was one of the qualities the value of which was perhaps understood by the creameryman even before he had fully learned to appreciate the meaning or value of the word integrity. It was learned that if the check was sent out promptly the matter of weight, test and price was of secondary importance; what the farmer wants is prompt pay.

Punctuality is an asset which any creamery employee may possess, for it is acquired by training. The effect from a manager's or a buttermaker's training along such lines are readily evidenced throughout the entire establishment. We should adhere strictly to the exact time of an appointment. A manager of a big hotel found it difficult to make his dairyman understand the importance of prompt delivery. He made an early morning hour appointment with the representative from another creamery. The fact that the representative was five minutes ahead of the appointed time resulted in that the hotel manager placed an order for his entire requirements of dairy products amounting to about $1,000 monthly with the new firm.

Checks for products received should be delivered at a definite time. If checks for milk or cream are sent through the mail they should be mailed on a definite day so the patrons will always have the satisfaction of knowing when they may expect to receive remittance. The driver collecting milk or cream should call on each farm at definite prearranged days and hours. Neglects will invariably result in loss of patronage.

Punctuality may be considered to be a direct product of system. A young buttermaker with whom I was well acquainted was very systematic. He had a written outline of his daily work; thus his head saved his limbs much unnecessary work. He would time himself when performing the various duties which he had outlined, and it was always his object to do his work a little quicker and a little better from day to day. This man developed a high degree of punctuality and efficiency and is today, as a result of his efforts, receiving a salary which amounts to several thousand dollars annually. I want the young buttermaker and creamery helper of today to learn from him, your chances for success are even greater, but it is attained only by hard and systematic work.

Many young men do not like hard work. It may be tolerated for a short time, but if it continues it will be called drudgery. These young men lack in perseverance. Some of these men may even work hard all their life, but they cannot stick to one line of work long enough to become proficient. It is surprising how many letters our departments receive from men who are merely helpers or inexperienced buttermakers asking that we recommend them to positions as creamery managers. This, we may consider to be the critical period in the creamery employee's life. If we are able to make him understand that such a position is won only through a number of years of persistent work and that it is a position well worth working for then there is good prospect that he will reach the goal but some will turn around and say, "what is the use," and they are lost. Too many young employees are paying more attention to the time they devote to work for their employer than to the quality of work they give him in return for their salary. When they have worked ten hours daily they consider that their responsibility ceases. Such an employee is not meeting with much success in the creamery. A. F. Sheldon says, "To hold on in the right path in spite of bars and obstacles, through storm and sunshine, through thick and thin, year in and year out, until the goal is won, is the greatest exhibition of human character. Great fortune, great renown, great victories of any kind, can only thus be won and won this way alone."

In order to develop perseverance it is necessary to have faith. The creamery employee must have faith in his own ability, faith in his own integrity. He must have faith in the ability and in the sincerity of his subordinates. He must have faith in the integrity of his employers and of his patrons and in the creamery as a business proposition.

Faith develops loyalty and a person involuntarily becomes an enthusiast. The pessimist has lost confidence in everything and in everybody. He is always complaining about the world getting worse. He is dissatisfied with his employer censuring him to everybody. He considers everybody dishonest and all but himself to be in the wrong. He is getting a new job once a year and is looking for another job 365 days of the year. We have all met this type of a man and know how unpleasant it is to be in his company.

The employee who becomes enthusiastic about his work is everybody's friend. We all like to associate with him for it is his greatest object to be of service to his fellow men. He is never looking for a new position but employers are looking for him.

The creamery owners looking for employees should guard most carefully against employing a man who cannot enter into his work with his whole soul, but in order to encourage the employee and inspire him with confidence the creamery employer can also do much and it is his duty to do it. Can the creamery owner expect the employee to have confidence enough in the creamery in which the owners themselves have not enough confidence so they will plant a rose bush in its yard? It is to be regretted that so few of the creamery managers have paid any attention to the outside appearance of the creamery and its grounds. This neglect is not intentional. It is merely due to the fact that their attention has not been called thereto. They have not in the past fully understood that the beautifying of the creamery and its grounds is one of the most visible signs of appreciation which can be offered to the buttermaker.

A short time ago when visiting a city creamery and talking this matter over with the manager of the plant he stated that he was unable to do anything for the reason that the building came up against the street and the alley. We found, however, that there was plenty of room for Virginia Creepers or other similar plants which would cover part of the wall toward the alley. Those plants would not merely find room for growth but would also cover up a good deal of less attractive wall. The horticultural department of the Iowa State College will be glad to co-operate with you, will even be able to send a man to your place to assist you. It is, of course, understood that it will be only a limited number of creameries that this man will be able to visit and in order to secure his services it is advisable to call at once. The material thus collected from places where they are beautifying their creamery grounds will be used for a bulletin. The representative might also happen to get a photograph from such grounds which would not be represented as models. If he does this, no names shall be added.

The contest started this year is merely a beginning. The contest has been held among the buttermakers for the reason that they have taken most interest, but the expense and labor should be borne by the owners of the creamery. It is reasonable to expect that inside of five years the creameries will begin to gain recognition for being the beauty spots of their town. We are confident that the creamery directors as well as the buttermakers are with us in this work. Furthermore Mr. Barney is determined that something must be done and has taken one step further. He will have his inspectors score the creameries while making their regular visits. This score will be considered equal to the score of the creamery grounds. The grounds will be judged partly from photographs and partly from personal inspection. The highest scoring creameries will be carefully inspected before the award is made. I have been assured that the Iowa State Dairy Association is willing to put up a $50 silver cup for a contest to continue over a period of five years. The winner for the first year will have a cut of his creamery engraved on one side of the cup and will hold the cup for one year. The other winners will have their names engraved, as well as names of creameries and year of winning the cup, a cut of the creamery winning the cup the fifth time will be engraved on the cup which will then become the permanent property of the buttermaker of that creamery.

If you go to Dayton, Ohio, you will find one of the most beautiful spots of that city to be the location of the National Cash Register Company's factory. Formerly this was the most desolate part of the city. This factory has won reputation over the world. This is not merely due to the managers' ability as business men, but largely due to their method of beautifying their grounds and factories so as to make them homelike to their employees.

Let us all unite in an effort toward beautifying our Iowa creameries. Let it be demonstrated that it is possible to make the creamery grounds the most beautiful spot in our town and in this tasteful and pleasant home we are doing much in the moulding of the characters of our creamery employees.

President Pearson, of the Iowa State College, made a few extemporaneous remarks complimenting the buttermakers on the work they were doing and on their progressive spirit. They are building up the state and they have it in their power not only to make good butter, but also to help make better farms.

Prof. Carl E. Lee, of Madison, Wis., made an interesting talk on ''The Workmanship of Butter.'' His address was illustrated with lantern slides and was exceedingly educational. His introductory remarks brought out several facts, among them being the overlooking of the patrons in the awarding of prizes to buttermakers. He said the patrons should be recognized in some way, as no buttermaker could make prize-winning butter unless his patrons gave him prize winning cream.

Lantern slides were used all through Prof. Lee's talk to illustrate various phases of buttermaking and dairying. His slides were especially prepared by himself and it is impossible to have cuts made for this report. Prof. Lee is very emphatic in his opinion that buttermakers should have the right to destroy poor cream. He spoke of the matter of soaking tubs. He recently made an experiment in which he soaked ten tubs alike and found that after soaking their weight varied from seventy to seventy-six pounds. Thus, he recommended taking the tare of every tub.

Many other subjects were brought out, but the pictures constituted the larger part of his time, and it is difficult to report without having the pictures to accompany the talk.

The first thing Thursday morning was the buttermakers' judging contest. It was open for every buttermaker who had an exhibit of butter at the convention. Ten tubs were selected by the judges and scored in advance of the judging contest. They were then scored by the buttermakers, and the results, as compared with those of the judges, decided the contest. Chris. B. Jensen, of Hubbard, won first place and the $25 gold-plated butter trier. Mr. Jensen's score was only ten and one-half points off. Julius Brunner, of Charles City, and F. W. Bremer, of Sumner, tied for second place, their scores being eleven points off. They each received a silver-plated trier. Fred M. Zell, of Sumner, won third, being twelve and one-half points off.

Following the buttermakers' judging contest, Frank M. Brown auctioned off the convention butter. There was a good crowd of buyers and it was sold to the Great Atlantic & Pacific Tea Company, of Jersey City (being represented by Gus Ludwig), for 33 1-16 cents f. o. b. Waterloo. The New York market that day was 30 cents for extras.

The convention went into a short session in the forenoon, at which time the election of officers took place, resulting as follows: President, W. B. Quarton, Algona; vice-president, Geo. Kolthoff, Britt; secretary, J. J. Ross, Iowa Falls; treasurer, E. T. Sadler, Waterloo. All these officers were re-elected.

Prof. C. Larsen, of Brookings, S. D., was called on and made an address on "The Work of the Dairy Cow."

WORK OF THE DAIRY COW.

The dairy cow as a worker is in a class by herself. She works day and night and year after year provided she is given the opportunity. Few of us stop to analyze the work of the dairy cow. When such is done her importance on the farm is perhaps more fully appreciated.

The average field crops such as hay, straw and grain, are bulky, heavy and expensive to market. Especially is this true for us who live in the central west and northwestern states a long distance from central markets, and for those whose farms are located a long distance from railroad stations. Many farmers are located from six to fifteen miles from a shipping point. Such farmers can not load and unload and make much more than one trip each day. To haul a load of hay to town will then cost the value of a day's wages of team and man. To haul one load of grain will cost about an equal sum.

When this grain is unloaded at the elevator it will cost about one cent per bushel or about $1 per wagon load to get it into the railroad car.

When it is loaded, then there is the expense of transportation to the central market, which for this territory is usually Chicago. From Sioux City, Iowa, to Chicago it costs seventeen cents per 100 pounds to market corn. The transportation charge on hay from Sioux City, Iowa, to Chicago, is twenty cents per 100 pounds.

During the winter months a dairy cow will eat about three tons of hay and one ton of grain. To get this feed for one cow from the farm to Chicago market will then cost:

Hauling from farm to shipping point three loads of hay @ $4.00	$12.00
Hauling from farm to shipping point one load of grain	4.00
Transportation or freight on three tons of hay from shipping point to Chicago @ 20c per hundredweight	12.00
Transportation or freight on one ton of grain @ 17c per hundredweight	3.40
Total cost of marketing feed for one cow per year	$31.40

This cost has been calculated on the basis of carload rate, and does not consider elevator charge, nor commission for handling and selling at central market place.

The work of the dairy cow is to reduce this marketing expense. A fairly good dairy cow should be able to change this feed into 300 pounds of butter. The cost of shipping 300 pounds of butter from Sioux City, Iowa, to Chicago is $1.35. Adding $2.00 for hauling it from farm to shipping point, the cost of marketing the 300 pounds of butter would therefore be about $3.35. The cost of marketing the feed necessary to produce this butter as shown above is about $31.40. The dairy cow thus reduces the cost of marketing field crops from $31.40 to $3.35 or to about one-ninth as much.

In these days when there is so much discussion and even criticism of the high freight rates, farmers should permit the dairy cow to help solve this problem of high transportation.

REDUCES WEIGHT AND BULK.

The organism of the dairy cow is especially adapted for handling bulky field crops. On this account she is especially suited for the farmers of the central west and northwestern states. The dairy cow can utilize a larger per cent of nutrients in the form of bulky or rough feeds than can any other farm animal.

The three tons of hay and one ton of grain will occupy a space equal to about 1,300 cubic feet. This large volume, the cow will transform or change into about 300 pounds of butter occupying only about five cubic feet of space or to a volume of concentrated human food only 1/256 as large. As stated above a dairy cow will consume about three tons of hay and one ton of grain or an amount of field crop equal to about four tons. This the dairy cow changes into about 300 pounds of the most concentrated human food known. The heavy field crop is reduced to a weight equal to one-twenty-sixth as much.

While these calculations cannot be accurate for all cows and for all conditions, they are considered conservative, and point with a great deal of significance to what the dairy cow is able to do in the way of changing bulky and weighty field crops into concentrated human foods, for which there is always a ready demand at high prices.

PRESERVES AND INCREASES RICHNESS OF LAND.

The land in the central west is rich and productive. There is, however, evidence on every hand that land which has raised a crop for several successive years is not so productive as it formerly was. The average wheat yield is not now so large as it was a few years ago. Those interested in agriculture have learned and are realizing the danger arising from an exhausted soil. The dairyman does not worry about a decrease in the productivity of his land. Instead his land is increasing in richness. Instead of a less productive soil his soil production continues to improve.

The dairy farms of Illinois, Iowa, South Dakota and other states amply emphasize this. By dairy farming the little country of Denmark doubled the yield of their lands in twenty years. Why? Because of the cow. Instead of hauling their grain, hay and straw away from the farm to market, these products were fed to the dairy cow. She transformed these field crops into butter-fat, skim-milk and manure. The manure was hauled to the land, the skim-milk fed to calves and hogs, and the butter sold as a concentrated expensive human food. The land was thus left richer than before and the farmers' pocketbook was fattened, two essentials in the economics of life. When $1,000 worth of hay is hauled from the farm about $600 worth of soil fertility or plant food is lost. In $1,000 worth of wheat sold, the farmer loses about $250 worth of plant food. In $1,000 worth of butter sold the farmer loses less than one dollar's worth of soil fertility.

In addition to the feed raised and fed, the dairy farmer usually buys some concentrated feeds rich in nitrogen and minerals, such as bran, oil meal and cottonseed meal. The products and by-products of these feeds add to the fertility of the land. So the dairy farmer not only maintains the fertility of his soil, but he actually increases it.

This work of the dairy cow then has a much greater significance than just to provide a profit and daily living. The keeping up of the soil fertility is a work of the dairy cow, from which future generations, as well as the present one, will reap benefits. The dairy cow should therefore have an important place in any scheme of permanent agriculture.

FURNISHES WORK DURING SLACK SEASON.

The central northwest states, by some, are objected to because of the short crop-growing season and the long winters. From a standpoint of crop growing only, this is undoubtedly a valid objection. To grow crops or to produce new wealth only during about five months, and have this manufacture of human food stopped the remainder of the year, is not good farm economics.

There are about 217,000 farms in Iowa. It is safe to say that each of these farms employ labor at the rate of two men in the summer and one during the winter. Granting this to be true, an army of over 200,000 of Iowa's best and strongest workers is every fall turned from a field of production of new wealth to a field of non-production of new wealth; in some instances from a field of activity to a field of inactivity. This is a serious loss. The total loss of so much intelligent human labor is almost indescribable and beyond comprehension of the finite mind. Who can say how many of these men thus turned away from a productive field might not be able to produce a Banostine Belle DeKol, a Jacoba Irene or a Spotswood Daisy Pearl. Sure it is that a certain percentage of these men would invent or produce something that would be a benefit and lasting monument to real constructive and more pleasant and profitable dairy farming.

The time of the year for the dairy work can be regulated; not so with other crops. The time of freshening is within reasonable control of the owner. For the average dairy farmer, the fall freshening cow is the most profitable. The winter affords the most favorable conditions for the farmer to get the best and most work out of the dairy cow; the labor is cheaper and more plentiful; the price of dairy products are about a third higher; the cow gives more milk during the year; and the fall calves are easier to raise.

In addition, the dairy cow affords opportunities for the various members of the family to partake in the work on the farm. The work in the barn and the dairy is not heavy work. It is work which requires attention and intelligence, two important characteristics which we wish to stamp into every young person's life. So the work of the dairy cow is not only to use labor in a profitable manner, but to aid and develop industrious, attentive young people of regular habits.

INCREASES FARM PROFITS.

On account of the high price of feeds which have prevailed during recent years, some farmers have questioned the economy of feeding the field crops to the dairy cow. To many the answer was that it did not pay. At the same time there were many others who prospered by feeding all they raised and even more, to the dairy cow. This apparent conflict in results was due to the kind of a dairy cow. The difference in the ability of cows to make money depends on the kind of a cow. Some dairy cows, having certain care and feed, will make a good profit, while another so-called dairy cow will not even pay for her feed. Considering this difference in cows, it is clear that it is impossible to state what profit a cow will make.

However, it is conservative to state, that an average good cow will change three tons of hay and one ton of grain into 300 pounds of butter, 6,500 pounds of skim-milk, one calf, and six tons of manure during about eight months. Granting that the skim-milk, the calf, and the manure pays for all the work, the 300 pounds of butter is the pay for the feed. This butter produced during the winter will bring an income of about $90. The three tons of hay and one ton of grain would have to sell at a pretty high price to bring any such income. Twenty dollars for the one ton of grain and $24 for the three tons of hay or a total of $44 are considered to be about what this feed would bring on the market.

In nearly every instance the man who says that dairying does not pay, is the one who keeps poor producing cows. Even the average run of cows kept for dairy purposes are money makers.

According to investigations a dairy cow will recover for human food about 25 per cent of the dry digestible matter consumed; a hog about 15 per cent; and a steer about 3 per cent. This together with the fact that a good dairy cow will return $2 worth of produce for every $1 worth of feed consumed should cause farmers working expensive land and raising expensive feeds to carefully study the various phases of the work of the dairy cow.

The profits of a dairy cow can be anticipated and realized with a greater degree of surety than in any other one phase of farming. A mature crop of grain and a high price for the same may be anticipated, but seasons and conditions of market may be unfavorable. Feeds for cows, and a good steady market for dairy products are as sure as anything can be in this world of production.

The returns are also quick. The feed may be fed to the cow and the product realized on, even during the same day. This avoids credit at the store and in the banks. The dairyman is independent and is able to pay his debts as fast as he contracts them.

TO REPRODUCE.

The above discussion has been confined to the production only, to the turning of labor and feeds into dairy products and money. Another very important work of the dairy cow is to reproduce. The better the cow the more valuable is this phase of the cow's work. This work of reproduction is largely carried on at the same time that the cow does the remainder of her work. Several cases are on record where one calf sold for $10,000. This may be considered the maximum. The value of a cow's offspring may be said to vary from $5 and up.

The work of reproduction of a good cow is worth a great deal more than the common value set on a calf. A calf has a certain intrinsic market value. In addition to this, an individual of large producing strain and of a good family of good type, is a carrier or vehicle of valuable hereditary characteristics. She is a carrier of the combined characteristics of her ancestors. The good dairy cow transmits these to all of her offspring. This work of transmitting good dairy qualities is one which many dairymen overlook. It is a quality which cannot be seen, which cannot be handled, yet it is the most valuable force in a cow, when a man is trying to improve his herd.

Nearly every farmer has one cow having several daughters, which he highly values, and which he refuses to sell. This cow is of good type and a large producer; just the kind of a cow he wants. Her daughters are all of the same color, similarly good type, and equally good producers. These desirable characteristics are regularly transmitted to one calf each year. These calves again may possess this same power of transmission to their offspring, and so on from one generation to the other. Who can value this work of a cow of transmitting these desirable characteristics? The informed, wide-awake dairy farmer co-operates with this force of heredity, and highly values that work of the dairy cow, and the writer believes that the time is near when every farmer who milks cows will realize and appreciate this great work. When that time comes then the improvement of dairy cattle will go forward, with astounding rapidity. At the present time, one owner of the cow, who is a student of her work, will concentrate this force of transmitting desirable dairy characteristics; and another one, working less intelligently, will undo what has already been accomplished.

The above discussions have been confined to the direct results of the chief functions of the dairy cow while alive. The indirect benefits, and the value of her carcass cannot be considered here.

A rising vote of thanks was tendered Prof. Larsen, and, on motion, the secretary was instructed to have this address printed in circular form to be distributed among any members who wished to use it for distribution among creamery patrons.

Secretary Ross, at this time, paid the exhibitors a very high tribute on the quality of the butter. He said:

There were 167 tubs entered, only two being from outside the state. There are sixty tubs in the whole-milk class and 105 in the cream class. The average score of butter in the whole-milk class is 94.45; in the cream class, 92.43. Average of the entire 165 tubs, 93.43. The average of the highest ten tubs is 97.3.

This is certainly an excellent showing and the Iowa boys are to be congratulated. Last year there were 159 tubs entered and the general average score was 93.4. The average score of the highest 10 tubs last year was 96.97. In 1911 only 143 tubs were entered, which shows that the number of entries is steadily increasing each year and the quality is improving likewise.

With one or two exceptions, the low of butter was in excellent condition and showed fine workmanship.

When it comes to presenting prizes, there is one man who can do it perhaps a little better than anyone else. He is a master of presentation speeches. E. M. Wentworth, of Des Moines, was called to the platform and presented the various prizes given by the association. He called T. E. Sadler, of Oelwein, and presented him with a gold medal for winning the highest score in the whole-milk class, with a score of 98. To A. W. Mooney, of Denver, he gave a medal for being second, with a score of 97.5. W. H. Anderson, of Algona, was given a gold medal for having the highest score in the gathered cream class, with a score of 97.5, and Carl Nelson, of Swea City, won second, with a score of 97. Mr. Wentworth also presented the silver loving cup won in last year's educational scoring contest by P. W. Peterson, of Finchford, and Erve Cole, of Lamont. These men tied, and it was agreed that Mr. Peterson should hold it six months and Mr. Cole six months. Mr. Cole was presented the cup for the next six months. With each prize, Mr. Wentworth spoke words of congratulation and encouragement.

Mr. Wentworth next presented the prizes won in the Iowa Beauty contest, or the contest for the best looking creamery grounds. The prizes were distributed as follows:

First, Guy Thomas, Clear Lake, $20.00; second, O. F. Bolig, of Fenton, $15.00; third, G. Steussi, Manchester, $10.00.

During the Dairy Show week there were addresses by the Hon. William J. Bryan, Governor Clarke and Prof. Pearson, but these talks were outside of the convention proper and were not made an association record.

The work of the Iowa State Dairy Association, under supervision of E. S. Estel, state dairy expert, was presented in condensed form in the following report:

WORK OF IOWA STATE DAIRY ASSOCIATION.

During the past year the educational department of the Iowa State Dairy Association has carried its work into every section of the state. By means of special trains, creamery meetings, farmers' institutes and other gatherings, the lecturers have addressed 293 audiences and reached over 40,000 dairymen and farmers.

In order to come in contact with as many people as possible in a limited time and complete a tour of all the railroads in the state, the special train was again adopted. By the co-operation of the Chicago & Northwestern and the Minneapolis and St. Louis Railways, 168 meetings were held in less than four weeks. As a means of making the lectures clear and practical, dairy cattle, barn equipment, testing apparatus, etc., were carried and used for demonstration purposes. Special coaches were provided for the women and children. These cars proved very attractive and were always filled to their capacity.

At the completion of these two specials all but thirty-two towns in which creameries were located had been visited by dairy trains and fully 185,000 of the 212,000 farmers in the State had had a chance to attend one of these meetings. Of the ninety-nine counties, ninety-four have been visited and from one to fourteen train meetings held in each. The five counties not reached by this means have each had a number of gatherings which were addressed by lecturers furnished by the Association.

As a result of the growing interest in dairying the farmers' institutes have been giving it a prominent place on their programs. During the winter of 1912-13 thirty-two of these were addressed by representatives of the Association.

Permanent dairy organizations have been fostered in various sections, chief among which is the Fayette County Breeders' Association. This organization is self supporting in every way, and is on a very substantial foundation. By establishing local clubs, the State Association is enabled to carry on its work in a more systematic manner.

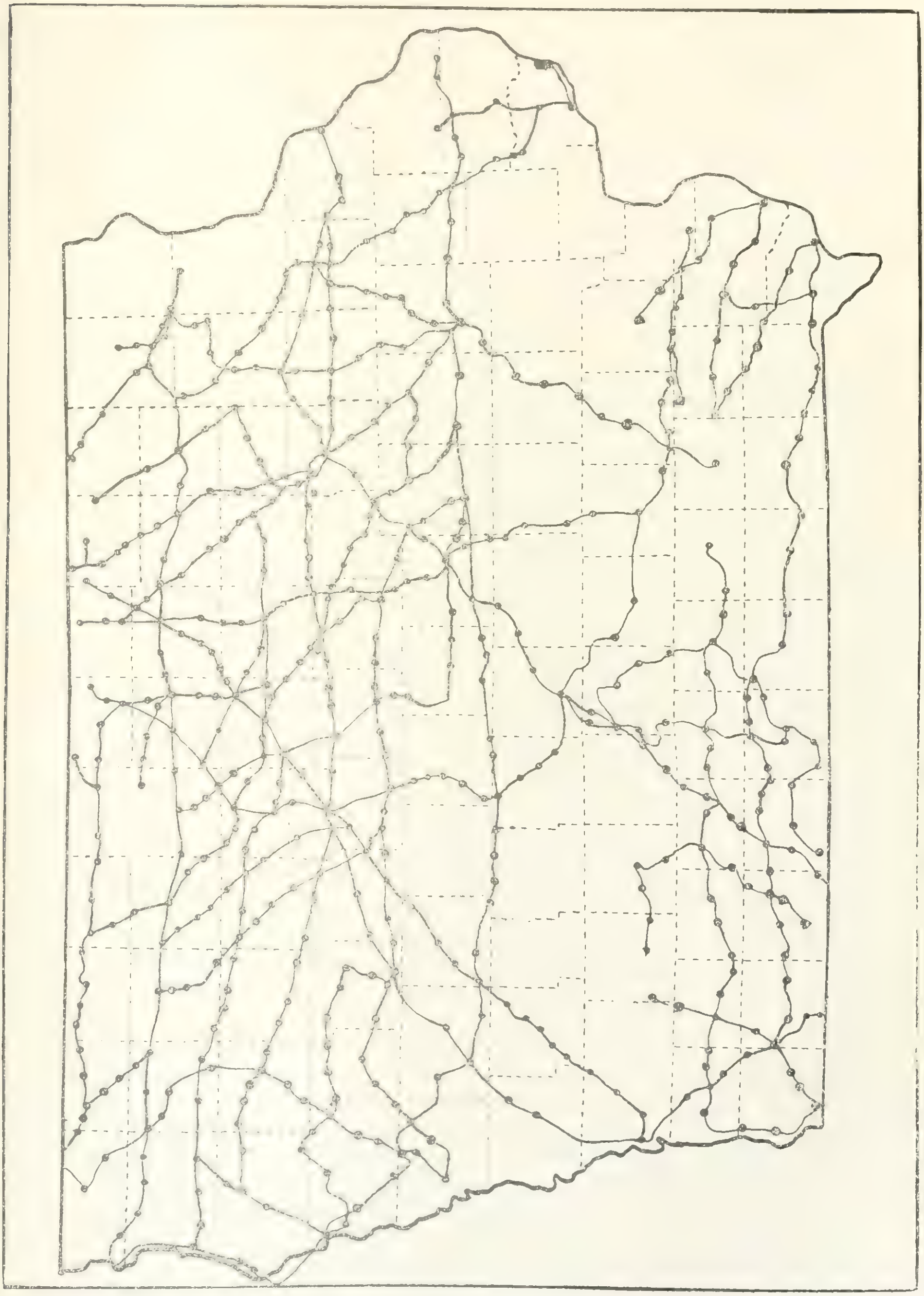
Several dairy short courses were also conducted. These were in the older dairy communities where detailed information was required. These were three days in length and instruction in breeding, feeding, testing, dairy cattle judging, etc., was given. Although the special dairy short course was new the attendance was very good at each of those conducted.

The creamery picnic during the summer months has become very popular, and a larger number of these were held during the past year than ever before. Such gatherings are an excellent means of bringing the patrons together in a social way as well as to hear the practical discussion of subjects essential to the improvement of conditions on the farm.

During the spring and fall months when the work is urgent on the farm and it is therefore difficult to hold meetings, bulletins are sent to the local newspapers. These contain timely suggestions which assist the farmer in solving the problems which confront him with reference to his dairy herd. They are written with the idea of assisting the creameries in improving the quantity and quality of the raw product. The newspapers are lending their assistance by giving the information a prominent place in their columns.

One of the most important features of the work has been the establishment of a great dairy show in conjunction with the annual convention. This year the show was unsurpassed by any similar event. It brings dairy cattle breeders with their choice animals from every part of the United States and offers the farmers of not only Iowa but the Mississippi Valley an opportunity to become acquainted with the various breeds. Premiums are offered for butter, cheese and milk which, in addition to the display of dairy appliances and farm implements, bring thousands of prosperous farmers. The convention proper is held in a building on the grounds, and subjects of interest to the buttermakers, creamerymen and dairymen are discussed by authorities of national reputation.

The Iowa State Dairy Association in all of its work has been assisted in a large measure by the other dairy interests of the State. Chief among these is the Dairy and Food Department which had a number of speakers on the trains throughout the tours and also co-operated in all the other work. The individual dairymen have also sacrificed portions



of their time to educating their brother farmers in better methods and giving them the benefit of valuable experience. The Dairy Department of the Iowa State College has also given assistance from time to time.

The results of the work, although somewhat slow, are gratifying. Iowa is gradually taking her rightful place among the dairy states. System is being introduced and the unprofitable animals are being replaced by the dairy breeds. The silo is considered a necessity and the legumes are found in many places where formerly less valuable crops grew. The introduction of the pure bred sire, economical feeding and intelligent care are revolutionizing the industry. Following these improvements as a natural sequence come the substantial farm buildings and attractive homes which make a permanent agriculture.

SUGGESTIONS FOR THE IMPROVEMENT OF DAIRYING IN IOWA.

(Prepared for use in this report by E. S. Estel, State Dairy Expert.)

Iowa is essentially a dairy state. This is true because of the adaptability of the soil for growing all of the necessary feeds for the large and economical production of milk. As a dairy production state we stand third. During the past year the creameries of Iowa manufactured 96,953,183 pounds of butter, exclusive of the milk required for cheese making, market milk supply and ice cream.

Although we have this large production of dairy products, there is a great deal of room for building up the industry. The cow, which is the foundation of all dairying, has not received the proper attention or care, and as a result the average production is much lower than it should be. The subject of improving the dairy herds of the state is of vital interest to every farmer and dairyman.

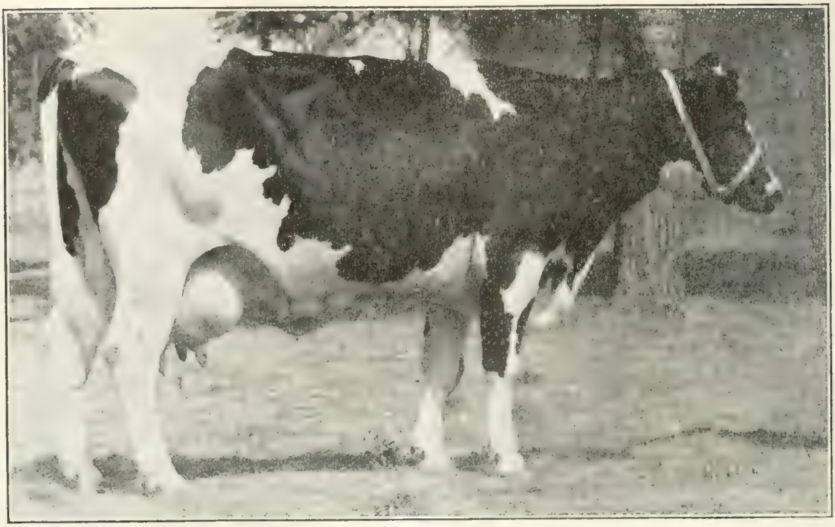
WHY AND HOW TO TEST THE COWS.

There are two classes of unprofitable cows being milked at the present time. To the first class belong those that do not bring the owner a profit because they are not fed or handled properly. The other class is composed of those that do not pay for the feed they consume because of their inability to produce a large quantity of milk, regardless of how they are cared for. To the latter group belong the robbers of our good and poor herds as well.

There are a million and a half cows furnishing butterfat for the creameries of the state, and five hundred thousand, or one-third of the total number, are being kept at a loss. Undoubtedly two-thirds, or over three hundred thousand, of the unprofitable animals belong to the class of which I wish to speak. The average production of butterfat in our state is only 140 pounds. While there are many individuals that are producing from two to five times this amount they are dragged down and humiliated by their neighbors. If we were to visit three-fourths of the herds in Iowa we would undoubtedly find in each two cows, standing side by side, under the same conditions, appearing in general conformation to be the same. If we should test these cows we would find one producing three or four times as much as the other. It is this lack of knowledge of just what the cows are doing that brings the average down to such a low mark. There are hundreds of cow owners that cannot tell within ten or fifteen dollars of what each cow produces during the year. The farmers of the Mississippi Valley are noted for their thrift along other lines. They have improved machinery of every kind. They have bred their horses, hogs and beef cattle until they are the recognized leaders of the world, but the average dairy cow is no better than she was a hundred years ago.

However, at the present time there is an awakening along dairy lines, and the more progressive are beginning to realize the value of keeping a good cow and the absolute loss in keeping a poor animal. The cow must be considered as a machine for the production of milk and therefore must be disposed of if she does not accomplish her work. Immediate improvement of the herd can be best accomplished by weighing and testing the milk of each cow. By doing this the butterfat production of each animal is determined and if at the end of the year some of them fall below a certain standard they should be sold to the butcher. It is well to set some standard and then if our cows fall below it they can be sold or fattened for beef. In attempting to weed out the unprofitable cows, the first step is to weigh the milk. The Dial milk scale, which is generally used, can be hung in a convenient place in the barn and each cow's milk weighed after each milking. The weights are recorded on a record sheet attached to the wall near the scale. These record sheets may either be made at home or printed at a very low cost. They are arranged with the names of the cows at the top and the days of the month at the side, thus furnishing a complete record of the herd for one month. The next step is to take a sample. This must be done carefully in order to get a representative quantity of milk. Probably the best way is to pour the milk from one vessel to another several times and then immediately transfer a portion of it to the sample jar by means of a small dipper. It is very essential to stir the milk before taking a sample, in order to have an even distribution of fat globules. If the milk is allowed to become quiet the fat rises to the surface and if our sample is taken from the top it is high in fat, while if taken from the bottom it is low. The sample jars should be air tight. The most popular jar at the present time is the pint or half-pint milk bottle which has the patent tin lid. These are cheap, durable, and easily cleaned.

There are two methods of taking samples. One is known as the individual, while the other is the composite. By the individual is meant a portion of milk taken from a single milking, placed in a jar and tested separately. The composite sample consists of a relative portion of milk taken from several milkings, placed in one bottle and tested collectively. The first method of sampling is the more correct for the average farmer because definite proportions of milk are not necessary. After the samples are properly secured and the milk weighed, it only remains to determine the percentage of fat. This is accomplished by the Babcock test. The operation of the Babcock test is not difficult, although it should be thor-



This Iowa Holstein shows the five essential characteristics of the good dairy cow:

1st. Strong constitution indicating great health.
2d. Large feeding capacity.
3d. Strong nervous temperament.
4th. Blood flow large and in proper direction.
5th. Large and well developed udder.

oughly understood before one relies upon his work. Because of the limited space I shall not explain the operation of the test, but shall refer the reader to books or bulletins on the subject; suffice to say that these bulletins may be secured free by writing to the Experiment Station. The objection frequently urged to weighing and testing milk is that it requires a great deal of time. It is true that some extra time is necessary, but if it furnishes us a means of finding the poor cows is it not time well spent? If we can find the unprofitable animals and dispose of them we can save a great deal of time in milking them seven hundred times each year. The milk should be weighed each day, but only two days each month are required for taking samples. Samples may be kept until some rainy day by placing a preservative tablet in each bottle. Thus the testing can be done when field work is impossible.

The Cow Testing Association is also solving the problem of weeding out the poor individuals. This is an organization of twenty-six farmers in one community who hire a man to test their cows once each month. The man in charge of such work should be responsible, and if possible a graduate of a dairy school. He should understand dairying in general so that he can assist the farmers in feeding, breeding and caring for their stock. The expenses of the organization are paid by a definite assessment upon each cow under test.

I have thus far only spoken of the benefit which the cow owner receives by weeding out his herd, but there is another great factor which enters into the profit side of dairying. At the present time there is a great demand for dairy sires to head the herds. In purchasing a sire the buyer should demand a milk record of his dams and grand dams. There are a few breeders who have been keeping production records. As a result they can demand a high price for their calves, because with each individual they can give a complete record of his or her ancestors. Many farmers are receiving from $25.00 to $75.00 more for their calves because the scales and Babcock test furnish an accurate record.

The problem of improving the dairy herds should concern every farmer, regardless of how many cows he milks. The present neglect in this subject and the great loss through poor cows each year means many thousands of dollars to the state. Shall we continue to go blindly through the next generation as we have in the past?

THE PURE BRED SIRE.

The economical improvement of the herd after the cows have been selected is best accomplished by the use of a pure bred sire. Many dairymen of today consider too seriously the cost of a good animal, and as a result lose sight of the future profits which are in store for them. Although there are undoubtedly many good dairy bulls which are not registered, yet the man who contemplates the purchase of a bull to head the herd should select an animal that is registered.

One who wishes to purchase a dairy bull has two types from which to choose. The one is the pure bred whose pedigree shows the records of his ancestors and their breeding; the other is the grade or scrub that may have had good milk producing ancestors, but probably not. On one hand we are sure of the animal's dairy qualities, while on the other there is uncertainty. The average pure bred sire to head a grade herd costs about $150.00, although owing to the demand these animals are gradually becoming more expensive. The grade sire can be purchased for $40.00. Here is the stumbling block of most dairymen who have not had experience with both bulls. The interest on the pure bred for five years, which is the period of time we will consider, at seven per cent amounts to $52.50, while that on the scrub for the same time, at the same rate, will be $14.00, again giving the scrub the advantage. Figuring the insurance at eight per cent for the pure bred and ten per cent for the scrub, we have this item amounting to $30.00 for the former and $10.00 for the latter. The insurance rate on the pure bred is less than that on the scrub because of the greater care the more valuable animal is likely to receive. Summing up, we find that the entire cost of the pure bred sire in five years is $82.50, and that of the scrub $24.00. It is reasonable to estimate that each bull would produce sixty daughters in the five years. Dividing the extra cost of $58.50 of the pure bred among the sixty daughters, makes them each cost nine cents more than those of the scrub. Considering that the pure bred as a rule is much more prepotent, the low cost of his offspring over those of the scrub becomes apparent.

There are other things, however, just as important as pedigree that must be recognized. The bull purchased should be a good individual. It is poor policy to use an inferior animal simply because his ancestors have been high producers, for it is in his progeny that the purchaser is interested. In choosing a bull from his own individuality one must look for those points of conformation, constitution, a full crest, fine silky hair and pliable hide. His body should be large and deep with well sprung ribs, indicating feeding capacity. He should not be beefy, and although his hind quarters should not be as thin as those of the cow, yet he should be well cut up in the twist and carry no superfluous fat.

The importance of the individuality of the sire is well demonstrated by an experiment carried on recently by the Missouri station. A pure bred bull was purchased and used on a large number of cows in the herd. A close record of production was kept on all the cows and it was found that the daughters were not producing as much fat as the dams. The average number of pounds of fat for the dams was 234, while that of the daughters would amount to 216. In six years this loss on thirty daughters would amount to $939.00. After these results were received a second bull was used to replace the first. This animal was much more prepotent to transmit dairy qualities than the previous one, and increased the average production of fat from 220 pounds in the dams to 280 pounds in the daughters. Instead of a loss this sire increased the value of the thirty daughters $2,700 over that of the dams. Still a third bull was used and proved himself much more prepotent to transmit dairy qualities than the second. The cows this bull was used on averaged 238 pounds of fat, while their daughters averaged 342 pounds, an increase of ninety-six pounds. The gain in six years on thirty daughters was $4,950. This shows the importance of records, and demonstrates how a large number of the common herds are being ruined because of the ignorance or neglect of the owners.

In both the beef and dairy herds we find the heads of most of the herds purchased when but two years old. People do not seem to recognize the importance of the tried and mature bull. It is true that the young bull is much cheaper and can be used for a much longer time, yet we know nothing of his value. At present the bulls are crowded when they are yearlings and two years old, and then sold when three or four years of age because they are considered too cross to be safe. There is no reason why a bull should not be used until ten or twelve years old if he is handled properly and given plenty of exercise while young. The bull is too often confined in the barn. He should have a small lot or should be made to run a tread mill for an hour or more each day.

It has often been said that the bull is half the herd. This is not only true, but he is a great deal more if grading is carried on in the right manner. In fact he soon becomes the whole herd if line breeding is practiced. To illustrate: Let us cross the pure bred sire on a grade cow. The first generation contains half the blood of the sire and half the blood of the dam. If the second generation is bred back to the same animal the resulting offspring will contain three-fourths the blood of the original sire. If this inbreeding is continued at the end of the sixth generation we have the pure bred blood comprising about three-fourths of the herd. The progeny at the end of this period contains ninety-eight and four-tenths per cent pure bred blood. It does not mean, however, that the same sire should be used throughout the entire period. This illustration is true whether or not a change in the sire is made. If the sire is especially good, his place in building up the herd is invaluable. On the other hand if he is especially poor dairying soon becomes an unprofitable business.

FEEDING FOR MILK PRODUCTION.

In feeding the dairy cow there are two essential things to keep in mind. The first of these is efficiency or the necessity of feeding enough of the feeds which contain nutrients for the manufacture of milk. The second is economy or the balancing of the ration with the cheapest sources of the necessary nutrients.

Of the food consumed by the cow sixty per cent is used for maintaining the body and forty per cent for the production of milk. As in the case of any animal, the requirements of the body are first taken from the food and if the last forty per cent is not added one cannot expect a large milk flow. In the majority of instances, however, it is not the lack of a sufficient quantity of feed, but the wrong kind for the manufacture of milk. Milk contains on the average eighty-seven per cent moisture, five per cent milk sugar, three and one-half per cent protein, three and one-half per cent fat and seventy-five hundredths per cent ash. Since the cow cannot manufacture milk from anything except the food which she eats, it is necessary to have all of these constituents contained in her ration. The balanced ration, which is so often spoken of, is simply the proportioning of the various food nutriments in such a manner as to supply the demand. Most of the feeds raised on the farm and fed to cows contain a sufficient quantity of the ingredients in milk with the exception of protein. This is the most needed and the most expensive part of milk. By the use of the ordinary feeds, however, we are getting protein in its most expensive form. Protein is that portion of food which builds up the muscles, bones, tendons, blood, etc., and is the ingredient in milk that makes it white. Carbohydrates are the portions that produce fat and heat. The fats are used for the same purpose as the carbohydrates.

An ideal ration must be succulent, digestible, palatable, and contain the necessary bulk. It must also be economical. By succulency is

An Iowa Jersey—Mary Minsky, No. 188133. She has a record of over 700 pounds of butter in a year.

meant that the feed should contain a sufficient quantity of moisture to make it appetizing. This is one of the great characteristics of silage which makes it a good supplement for blue grass during the winter season. The feed should be digestible, because if it is not used for milk production it is a loss. The cow is a ruminant and handles large quantities of bulky feed, but it is not good policy to use up the energy of the cow by passing large quantities of food through her which are not used in an economical manner.

If we are feeding a ration that does not contain enough protein the cow will decrease in production and the profits give way to loss. Many are feeding only corn fodder and timothy hay. They expect their cows to produce twenty and thirty pounds of milk daily. One can readily understand how impossible it is for the cow to do this when we realize that she would have to eat approximately fifty pounds of these dry feeds every day in order to get necessary protein. Again, we cannot expect a cow to produce thirty pounds of milk a day on silage alone, for she would have to eat 200 pounds every twenty-four hours.

Protein can be most economically obtained in such feeds as clover or alfalfa hay. These can be raised on any Iowa farm. The cow that is giving a small flow of milk can do quite well on alfalfa and silage. However, the animal that is giving a large flow must receive some concentrated feed. At the present prices cottonseed meal furnishes us a cheaper source of protein than any other feed. Oil meal ranks next; then gluten and bran. Cottonseed meal should not be fed with a ration that is entirely dry. It makes an excellent feed together with corn and cob meal, alfalfa and silage. The average cow should not receive over two pounds of cottonseed meal a day. In the ration which does not contain silage, oil meal or bran will have a more desirable effect than cottonseed meal. This is because of their laxative and cooling effect.

It is always best to grind the grain ration for the cow. Experiments have proved that where grain is fed unground a large amount is wasted due to the undigested portions which pass through the animal. Grinding causes a more rapid and thorough digestion. The entire ear of corn should be ground. It has been found that corn and cob meal pound for pound contains the same feeding value as corn meal.

It is impossible to formulate a ration which is best under all conditions. Some cows have a digestive system strong enough to handle all the feed required for her maximum milk production, while others will break down under the same condition. In feeding the cow one should always watch her and see that she is not taking the fat from her body and thereby becoming weak. Cows which are underfed often do this, while on the other hand many cows will rob the pail to place fat on their backs. In compiling the ration the following rules may be of practical assistance.

First, feed all the roughage the cows will eat.

Second, feed one pound of grain daily for each three pounds of milk.

Third, feed all the cows will take without gaining in weight.

VALUE OF ALFALFA.

Alfalfa because of its great feeing value is becoming one of Iowa's most important products. It does not only have the high protein content for feeding all classes of animals, but in its growth it gathers nitrogen from the air and stores it up on its roots, therefore enriching the soil.

Alfalfa ranks very favorably in its protein content with some of the concentrated feeds. It has practically the same feeding value as bran, which at once shows the economy of its use. Alfalfa contains on the average 11.5 per cent digestible protein, bran 12 per cent, clover 7.5 per cent, and timothy 2.8 per cent. Alfalfa will also produce a larger yield per acre than either clover or timothy. From three to five crops of hay may be expected in Iowa, according to the locality.

Many have thought that alfalfa cannot be successfully grown in their respective localities. Present statistics show that there are over 46,000 acres of it growing in the state. Successful yields have been secured in every county, and it is only a matter of time before this valuable hay crop will be found growing on every farm.

It may be planted either in the spring or fall. Those growing it in the western part report very favorable stands from the spring sowing, while in the central and eastern sections the summer sowings have been more successful. Alfalfa is a plant which will not stand excessive moisture, and should always be grown on well drained land. It cannot compete with acid soils, and before locating the field the soil should be tested for acidity. If acid is found it can be remedied by the addition of ground limestone. This is an inexpensive process and should not be overlooked. Because of the small seeds the seed bed must be prepared in a careful manner. If the planting is done either in the spring or summer one should always be careful to disc and drag the ground thoroughly. If the summer seeding is done the land may be used for a small grain crop. Just as soon as the grain ripens it should be removed and the land covered with a good coating of barnyard manure. It should then be plowed, disced four times and dragged well to firm the seed bed. If the seeds have not been inoculated with nitrogen by the use of some of the commercial preparations, soil from an alfalfa field or sweet clover field should be spread on the ground. This should be immediately disced in and dragged. The alfalfa seed should then be drilled at the rate of sixteen to twenty pounds per acre.

In purchasing alfalfa seed care should be taken in getting it from localities north of yours. Seed produced on irrigated land will not do so well as that produced on dry land. The American variety will prove more successful and make a better class of hay than the others. There has been considerable discussion in regard to the making of alfalfa hay. As a general rule about the same care is required as in making clover hay. The curing process is a trifle more difficult due to the larger yield and the succulence of the stems.

THE VALUE OF SILAGE.

It is a general belief that the only way to make money is to get high prices for our products and have plenty of these products to sell. Since prices are not always high and the farmer does not always have a large supply there must be some other factor entering into the profit side of farming.

This other factor is cheap production. It is reasonable to state that the dairyman receiving only a fair price for his product should be able to have an income sufficient to pay him wages, besides a fair net profit. With the present price of butter, the well managed dairy farm should indeed be a source of wealth.

We find by analysis that 40 per cent of the feeding value of the corn plant is in the stalk and leaf. If only the ears are removed we are securing but half the value of our crop. In other words, if the farmer has fifty acres of corn worth $20.00 per acre, for the ear alone he secures $1,000 worth of grain or 60 per cent of the crop. He leaves the other 40 per cent or $666.00 worth in the field. Of course it would be impossible for all of the corn to be placed in the silo, but if only 25 per cent was made into ensilage it would mean a great deal to the farmers of the United States.

By doubling the feeding value of the corn plant we are enabled to double the number of animals which can be fed from that crop. The writer knows of a farm in northern Iowa where it was difficult to keep twenty cows. A silo was constructed and two years later forty cows were being kept on the same area of land at a good profit. By raising twice as many cattle, it means the consumption of twice as much food on the farm. It means that the grain is not being sold as formerly and that the fertilizing elements are remaining on the farm to enrich the land.

Another important factor is the reduction in storage space of silage compared to that required by hay. We find that one ton of clover hay occupies 400 cubic feet, while eight tons of silage may be placed in the same place. Clover hay contains 886 pounds of digestible nutrients per ton and eight tons of silage contains 2,064 pounds; in other words, corn silage occupying the same space as clover hay furnishes storage for two and one-half times the digestible nutrients.

Silage as a milk producer compares very favorably with the other more concentrated and more expensive feeds. It is a very palatable, succulent food and in this respect can well be called the substitute for pasture. We are all aware of the increased milk flow when cows are turned to pasture in the spring, after receiving nothing but dry feeds for six months. The milk cow is a sensitive animal at hard work and therefore should be provided with the best food possible. The succulents furnished by silage acts as a spur to the appetite of the cow and causes her to relish her food in winter as well as in summer.

The amount of silage necessary for twenty cows for 240 days, allowing an average feed of forty pounds to each cow per day, would be ninety-six tons. The average yield of silage corn per acre in the corn belt is ten tons. At this rate ten acres of corn would furnish us a sufficient amount. The United States Department of Agriculture estimates the average cost of raising an acre of corn to be $11.07, and reliable authorities figure the cost of putting corn into a silo to average about 75 cents per ton. Then we may arrive at the actual cost of feed as follows:

The cost of silage for 20 cows, 240 days	$182.70
Cost per cow per day	.38

At the Ohio station several years ago, the substitution of silage for grain in the ration proved very successful. Silage was used to take the place of over half the grain and proved much cheaper. The silage ration produced milk for sixty-eight cents per 100 pounds and butterfat at the rate of thirteen cents per pound. The grain ration produced milk at $1.05 per hundred and butterfat for twenty-two cents per pound. This made the profit per month with the silage fed $5.86 and those of the grain fed $2.46, or more than doubled the income per cow. If the same method of feeding was applied on the farm, undoubtedly the same results could be obtained.

Experiments at the Kansas station show the results of silage fed cows compared to dry fed. The herds were of sufficient size to give reliable data and eliminate the individuality of the cows. The silage fed herds gave seven pounds more milk in summer and 95.5 pounds more in winter per month than did the dry fed cows. The butterfat also was .46 pounds higher in summer and 4.61 pounds higher in winter per month in the case of the silage fed herds. However, this increase in milk flow is not as marked as the decrease in the cost of feed. The cows on the silage ration were fed sixty cents per month cheaper than those on the dry ration. The cost of producing one pound of butterfat was reduced from thirty to twenty-one cents, which means that the silage feeder receives nine cents per pound more for his butterfat than the dry feeder.

For many summers, and especially the past season, the pastures have been very poor owing to dry weather in July and August. At this season the milk flow drops and is difficult to be restored. The dairymen should have something to take the place of grass at this time, and the use of soiling crops or silage is the only substitute. Soiling crops are good, but as a rule require too much labor. They must be cut every day and hauled to the cows. Besides there is necessarily a great loss in being obliged to feed the crops before they fully mature and after they are over ripe.

Summing up the results of the few experiments enumerated, we find that silage is not only one of the best feeds for the dairy cow, but furnishes a means of reducing the cost of producing milk and butterfat to practically one-half. It enables the steer feeder to reduce the cost of producing beef to such a point which means either a profit or a loss. It brings both the cows and steers through the feeding season in much better condition and saves a great deal of undesirable labor during the winter months.

THE COWS SHOULD FRESHEN IN THE FALL.

Last winter the writer had occasion to visit one of the best co-operative creameries in northern Iowa, and while there the manager complained that business was so slack during the winter and so exceedingly heavy during the summer months. Upon looking up the records we found that from November to May the creamery had purchased 78,412 pounds of butterfat, and from May to November 155,494, a difference of 77,082 pounds. We then averaged the price paid for the butterfat during the corresponding periods and found that during the winter months the average price was three cents per pound more than that paid during the summer months.

If the above purchases had been reversed during these two periods the 77,082 pounds of butterfat would have been bought at three cents per pound more, and as a result the patrons of the creamery would have received $2,312.46 more for their butterfat. This increased income for one year would be sufficient to equip the creamery with new fixtures throughout.

This is not the only advantage that the creamery would receive. It goes without saying that cream or milk can be kept in much better condition on the farm during the winter than during the summer, and therefore it arrives at the creamery in much better shape. First-class butter can only be made from first-class cream, and if better butter is desired at the creamery the only way to get it is to improve the conditions under which milk is produced on the farm. It requires a great deal less time to care for the milk and cream during the winter because the cooling process is much simpler. Since this is true the bacterial growths are lessened and therefore there is less danger of contamination. Again during the winter there is more time for the care of the cows and if the currycomb is ever used it is likely to be used more at this time of year than during the busy summer months.

Besides gaining this substantial increase in price and raising the quality of the butter made, the patrons, if they had their cows freshen at the proper time, would have received twenty per cent more milk; hence twenty per cent more butterfat would have been sold to the creamery. When a cow freshens in the fall she goes onto dry feed during the first part of her lactation period. After receiving dry feed for from five to six months she is turned out to pasture. This change of feed and conditions stimulates milk flow and she practically refreshens. The lactation is lengthened and from experiments thus far carried on the average milk production is increased one-fifth.

By having the cows freshen in the fall is also of great assistance in solving the labor problem on the farm. Under the present system it is not at all surprising that men do not care to work on the farm. They are hired in the spring when the field work begins and are employed until after the crops are harvested. During this season the cows are giving their greatest flow of milk and the hired man, after putting in a hard day's work in the field is expected to milk six or eight cows after supper. This is continued until fall when the other work is over, at which time the cows begin to dry off. The farmer now thinks that he can handle the work himself and as a result the hired man is released to shift for himself until the next spring. When April again comes and the field work starts the farmer again searches for a hired man. The man whom he had last year has found a job in the city and although it is not as remunerative as the position on the farm, yet it is more permanent and thus one more man is turned from the farm to the city.

The one important step which must be taken in order to solve the labor problem is to so arrange the work that it will be distributed throughout the year and employment made permanent. If the cows freshened in the latter part of November or the first part of December the heavy milking starts at the time of year when most of the farm work is out of the way. The hired man can take charge of these cows during the winter and when spring comes he is ready to begin field work.

Cows freshening in the fall give their highest production during the most favorable season for milking. By spring they have been in milk five or six months and naturally begin to decrease. As the hot days of July and August approach and the flies make it unpleasant for milking the cows are giving a small quantity. At this time we generally find a drouth in most sections, and if no soiling crops or silage is at hand the cows drop off in their milk flow. All of these adverse conditions are avoided if the cows are drying off at this period.

Calves dropped in the fall always do better than those born in the spring. One of the principal reasons for this is that there is more time to devote to their care during the winter months. Calves born in the fall are given a ration consisting of milk and dry feeds which are less likely to cause scours and other diseases prevalent when they are on grass and allowed to overfeed and become bloated. The fall calf is also old enough to take care of itself by spring when the field work becomes heavy and the flies troublesome. However, in order to get the best results in winter dairying it is necessary to have the conditions as near those existing in June as possible. This can be done on every farm with very little expense if the correct methods are followed. The warm air of June can be had by sealing and papering the barn with the extra boards and material found lying idle around every farm. The sunshine can be supplied by cutting holes in the side of the barn and supplying glass to take the place of the equally expensive siding. Ventilating flues or hinged windows with muslin over the openings will serve to furnish the pure air which is so necessary to the health of the hard working dairy animal. The tank heater will heat the cold water in the tank and take the chill off so that the cow will drink all that she needs to produce a large flow of milk. Lastly, the succulent, palatable, green grass of June may be substituted with good corn ensilage and the ration balanced by supplementing clover hay, alfalfa hay, oats, bran, cottonseed meal, etc.

If we allow one-third of the cows in Iowa to supply the cities, condenseries and cheese factories with milk, there still remains 1,000,000 cows producing butterfat for the creameries. Each one of these could easily be made to increase their production twenty per cent if they were bred to freshen in the fall. This would mean that instead of 96,000,000 pounds Iowa would produce 115,200,000 pounds of butter per year, which at twenty-five cents per pound would make a difference of 4,800,000 annually to the dairy interests of the state.

THE CALF AND ITS CARE.

Profitable live stock raising is always accompanied by a thorough understanding of the needs of the animals when young. The internal organs of the calf or the colt, as those of the babe, are very sensitive and if not cared for as nature has provided the young animal's vigor and stamina is impaired at a very critical period.

When the spring work is on in full blast we find most of the cows giving birth to calves. These in the majority of instances are neglected. If weaned they are placed in a dark corner of the barn and fed early in the morning and late at night. Their milk varies in temperature a great deal, and in many instances is fed in slop pails which form ideal breeding places for all kinds of injurious bacteria.

With butterfat at the present price it is readily understood that one cannot afford to allow the calves to run with the cows. Land values are gradually rising and therefore to make a profit the cow must not only raise a calf, but must furnish cream for the creamery as well. The skim milk calf if cared for properly can be raised to just as good advantage and much cheaper than the whole milk calf.

After the calf is born he should be examined and the umbilical cord or naval should be disinfected with a weak solution of some recognized disinfectant. This prevents the entrance of any germs into the young body which in many instances prove very dangerous. The calf should be allowed to suck the cow for several days in order to get the colostrum milk which is a purgative and therefore essential to the digestive tract.

After several days the calf should be removed to a clean dry stall and fed whole milk for about two weeks. He should not be given over four pounds to a feed and should be fed three times a day for the first week, after which time five or six pounds fed twice a day is very satisfactory. At the end of two weeks skim milk may be gradually introduced to take the place of the whole milk until at the age of a month the calf is entirely on skim milk. As the calf grows older the quantity of milk may be raised to fourteen or sixteen pounds, but one should be careful not to over feed.

Since fat is the only ingredient removed from skim milk, and as the other nutrients are sufficiently high the question arises as to the best and cheapest supplementary feed. Many are using oil meal and flax meal, but as these are quite expensive and prove no better than corn meal and ground oats, the latter should be used. These should be fed dry in a trough and if the calf is reluctant about eating it he may be started by rubbing a little on his nose after drinking his milk. Good clover or alfalfa hay should always be kept where the calf can nibble at it, and water should be provided several times a day. After a month old the calf may be left out on grass, but care should be taken that he does not eat too much.

One of the greatest causes for the enormous and unnecessary losses of calves is scours which is directly due to carelessness on the part of the feeder. The most economical way to overcome this disease is to prevent it. This can be done by the use of clean pails, by having the milk at a temperature of ninety degrees every time and by not gloating the calf with a large quantity. Again, if two or more calves are kept in the same pen they should not be allowed to suck one another's ears. In doing this the calf sucks a great deal of air into its stomach. The air comes in contact with the milk, causing fermentation to take place which results in scours. If one has a number of calves he should build small stanchions for them and fasten them for a while after they have drunk their milk. If grain is placed in the trough they eat it, thus getting the taste of milk in their mouths. The writer has visited a number of herds during the past month and in every instance where stanchions were used the calves were in good condition. On the other hand where they were allowed to run together after drinking their milk the majority were affected with scours.

If one is unfortunate enough to have calves with the scours, the writer has always found either blood flour or burned flour very effective in correcting the digestive system. A tablespoon of either of these given when the calf is fed for a day or two will prove successful. The latter is made by placing ordinary wheat flour in a skillet and stirring it over a fire until the contents become a uniform brown.

The excuse offered by many that they have no time to fool around with their calve's is the principal reason why the death rate is so high. The calf is the foundation of the herd and upon its care depends the future profit or loss.

PART IX.

Extracts from the State Bee Keeper's Report.

By **FRANK C. PELLETT**, State Bee Inspector

The year 1913 has been a very favorable one to the bee keepers of Iowa in spite of the severe drouth. There was an unusually heavy honey flow from white clover over nearly the whole state, and this was followed by a good fall flow in many localities.

The business of honey production has been given so little publicity until recently that there seems to be a very general idea that the business does not amount to much in this state. On the other hand the honey producing possibilities of other states have been so widely advertised that Iowa bee keepers have been induced to change locations, only to find, in many instances, that they left a better locality than they found. In making a comparison of the value of the bees on the farms in Iowa with those of other states it will be found that only one other state of equal area exceeds that of our own. Without regard to area Iowa ranks near the head of the list, only California, Texas, Missouri and New York ranking ahead of her. California and Texas have such exceedingly large areas that there is no fair basis for comparison and Missouri is but little ahead in spite of her greater area. Area considered New York alone ranks ahead of us. Colorado and Idaho whose possibilities in this direction have been so widely advertised in our state, are both far behind us in value of their apiaries in spite of their larger areas. The fact is, that Iowa's bees are worth more than both of these states combined, as shown by the census of 1910.

The men who are engaged in honey production as an exclusive business in this state are getting results equal to those derived from other lines of agriculture with less capital invested and with less risk. The fact that the business is open to men of small capital who are unable to engage in general farming because of the high price of land surely makes it desirable to encourage the industry as far as possible. Bee keeping as a business requires high grade talent and comparatively few men succeed in making it profitable as an exclusive line. This is not the fault of the business or of the locality, but of the men. It looks so easy that men are not willing to serve an apprenticeship or take the necessary time to become fully familiar with the business in all its details as they would expect to do in other lines.

The value of the presence of large numbers of bees to orchards and gardens in pollenating the blossoms cannot be overestimated, so that the value of the industry cannot be measured by the honey production alone.

Unfortunately for the bee keeping industry no statistics were gathered by the census bureau relating to bees and hive products excepting those kept on farms of three acres or more in extent. A large portion of Iowa's most successful bee keepers live in the towns and were not enumerated. This being the case probably not more than seventy-five per cent of the actual number of colonies were shown by these figures. The following table shows the number of colonies in each county as reported by the census of 1910.

Adair	1,598
Adams	1,156
Allamakee	1,840
Appanoose	2,735
Audubon	1,088
Benton	2,281
Black Hawk	1,707
Boone	2,035
Bremer	1,688
Buchanan	1,631
Buena Vista	1,104
Butler	1,904
Calhoun	1,190
Carroll	1,218
Cass	1,899
Cedar	2,948
Cerro Gordo	1,391
Cherokee	1,332
Chickasaw	1,065
Clarke	1,440
Clay	1,025
Clayton	3,079
Clinton	4,189
Crawford	1,570
Dallas	1,799
Davis	3,086
Decatur	1,968
Delaware	1,771
Des Moines	1,309
Dickinson	377
Dubuque	1,721
Emmet	428
Fayette	2,615
Floyd	1,037
Franklin	1,200
Fremont	792
Greene	1,162
Grundy	874
Guthrie	1,104
Hamilton	1,593
Hancock	725
Hardin	1,496
Harrison	1,473
Henry	1,806
Howard	924
Humboldt	823
Ida	1,251
Iowa	1,708
Jackson	2,186
Jasper	2,835
Jefferson	1,854
Johnson	1,882
Jones	1,860
Keokuk	2,758
Kossuth	815
Lee	2,362
Linn	2,613
Louisa	1,850
Lucas	1,715
Lyon	433
Madison	2,288
Mahaska	2,787

Marion	2,848
Marshall	1,399
Mills	560
Mitchell	1,030
Monona	1,389
Monroe	1,742
Montgomery	895
Muscatine	1,923
O'Brien	807
Osceola	266
Page	1,403
Palo Alto	637
Plymouth	1,454
Pocahontas	607
Polk	2,505
Pottawattamie	1,561
Poweshiek	1,484
Ringgold	1,691
Sac	1,201
Scott	1,704
Shelby	1,642
Sioux	695
Story	1,761
Tama	1,604
Taylor	1,565
Union	1,148
Van Buren	2,278
Wapello	2,215
Warren	2,840
Washington	2,400
Wayne	2,332
Webster	1,496
Winnebago	503
Winneshiek	2,076
Woodbury	2,137
Worth	566
Wright	1,268

According to the census report more than one farmer out of every eight in Iowa keeps bees. The average value of bees per farm reporting was only $17.88 in 1910. The fact that most of the extensive bee keepers of the state do not reside on farms and were not enumerated accounts for the small average. The same report shows an increase of 15.3 per cent in value of bees on Iowa farms in ten years, though no increase in the number of farms reporting bees is shown.

The reason that the development of bee culture has not kept pace with other lines of agriculture in this state, lies in the lack of organization and interest on the part of the bee keepers. They have not had state aid to stimulate interest as has been the case with the other agricultural and horticultural societies. The individual bee keepers have been isolated so that improved methods have been slow to be generally adopted. With other lines of work certain methods are in very general use over the entire state. With bee keeping it is different, and one is surprised to see what a diversity of utensils and methods are to be found among Iowa bee keepers.

Now that the Iowa Bee Keepers Association has become strong enough to attempt a systematic improvement of the industry along all lines this condition will soon change and Iowa will take first place as a honey producing state, area considered.

The association has taken up the matter of better premiums and better facilities for exhibiting hive products with every county fair in the state and asked that the industry be given the same consideration that is offered to other branches of agricultural activity. This has already resulted in greatly increased premiums at many county fairs and cannot but be of much help in stimulating interest in bee keeping.

DECREASE IN BEES.

From the census report the fact is well established that there has been a great falling off in the number of farmer bee keepers taking the United States as a whole. At the same time there has not been anything like a corresponding decrease in the number of colonies of bees. This indicates that those who continue to keep bees are specializing to a greater extent and keeping more bees. The presence of bee diseases is undoubtedly largely responsible for this condition, killing off as it does the bees of the careless apiarist.

The work of inspection can best be done early in the season, but as our appropriation is not available until July first the work must of necessity be somewhat prolonged. There is now available the sum of fifteen hundred dollars annually for inspection of bees. At the convention of the bee keepers association of Iowa in December, 1912, it was decided to ask for an appropriation of ten thousand dollars yearly for this work. The amount asked for was based on the fact that disease was then known to be present in thirty-three counties, or more than one-third of the area of the state with probably fifteen thousand bee keepers residing in these counties. At least this amount would be necessary if the State was to undertake the task of eliminating the bee diseases known as American and European foul brood. In my opinion, however, it would be unwise at present for the State to undertake such a gigantic task. Rather should the present appropriation be used to meet emergencies, to do thorough work in such neighborhoods as extensive honey producing interests are seriously threatened.

The most important thing to be attempted, in my opinion, is extensive educational work. Once the bee keepers come to understand the serious nature of these diseases, how to recognize them, and the proper treatment, the inspector's services will be much less needed. It may, and quite likely will, be necessary to ask for some increase in the present amount at some future time, but as yet sufficient time has not elapsed since undertaking the present plan of work to know definitely whether the amount now available will be sufficient. It would hardly seem to be more feasible for the State to undertake to examine all the bees in Iowa and treat all diseased colonies than to undertake to do the same thing with hog cholera or other animal diseases.

The fact that many bee keepers never examine the brood nests of their hives or know anything of disease and care less, makes it imperative that there be authority to compel proper attention in cases where there is a serious outbreak of disease. It is the present policy of this office to use the funds available where there is most at stake.

The past summer the work has been in the hands of three persons: J. W. Stine of Salem, who is the regular deputy, Harry A. Dooley, a student in the University of Wisconsin, who assisted for a short time, and the State Inspector.

The following is the result of the personal visitation of the three inspectors:

Apiaries in which disease was found	140
Apiaries visited	311
Total number of colonies	6,973
Number of diseased colonies	483
Number treated by inspectors	52
Number destroyed	32

A considerable portion of the whole number of 483 diseased colonies have been treated by the owners under direction of the inspectors. A number were also destroyed by the owners.

Total expense of inspection for 1913—per diem	$468.60
Office and traveling expenses	416.14
Total	$884.74

EDUCATIONAL WORK.

The above statement only represents a part of the work accomplished, however. A constant correspondence has been carried on with enquiring bee keepers and much information has been conveyed by mail. So effective has been the work accomplished by many bee keepers without assistance, other than instruction as to methods of dealing with disease, that I am now hopeful of accomplishing much more with the funds available than at first seemed possible. It is highly desirable that every bee keeper be fully informed as to the diseases likely to be met with and the proper treatment. To that end much information along this line is included in this report. Proper equipment and up-to-date methods are of great assistance in the prevention and treatment of disease. The bane of successful bee keeping is the box hive bee keeper whose ignorance is his only excuse. Disease is harbored by such apiaries for many years and is thus a constant menace to every progressive bee keeper for miles around. It is to be hoped that this matter will soon become so well understood that a man will be as much ashamed to keep bees in such a slovenly manner as he would to drop his corn by hand and cultivate with an old fashioned "A" harrow and single shovel jumping cultivator. Once the matter is called forcibly to their attention most men will either take sufficient interest to get proper equipment or quit the bees entirely.

It is in such apiaries that there is greatest need for inspection and where the inspector finds his greatest difficulty because of lack of understanding of the need of inspection, and the difficulty of reaching the brood nest and thus getting at the seat of the disease.

IOWA LAWS RELATING TO BEE DISEASES.

Acts of the Thirty-third General Assembly, Chapter 169. Prevention of disease among bees and inspection thereof.

Section 1. *Inspector of Bees—Term—Deputies.* The governor is hereby authorized to appoint a competent man as inspector of bees, who shall hold his office for a term of two years, or until his successor is appointed and qualified; and said inspector shall have the power to appoint deputies.

Sec. 2. *Powers and Duties of Inspector.* It shall be the duty of such inspector, when notified in writing, by at least three beekeepers of any locality, of the existence, or supposed existence, of the disease known as "foul brood" among the apiaries of such locality, to at once thoroughly examine such apiaries as are reported to be diseased and all other apiaries in the same locality, and thus ascertain whether such disease exists. If the bees in any apiary are in such place or condition as to prevent a thorough examination by the inspector, he may order the same to be put into proper place or condition for such examination. If such order is not complied with, and the inspector has reason to believe such bees to be diseased, he may cause them to be destroyed. If upon examination the inspector is satisfied of such disease, he shall give the owner or person in charge of such apiary full instructions as to the manner of treating the same. Within reasonable time after such examination the inspector shall, without other notice, make further examination of such apiaries, and if the condition of any of them is such as renders it necessary, he may burn, or cause to be burned, all the infected colonies of bees in any apiary, together with all the combs and hives, in order to prevent the further spread of the disease.

Sec. 3. *Annual Report.* The inspector shall make a yearly report to the governor stating the number of apiaries visited, the number of those diseased and treated and the number of colonies of bees destroyed. Such report shall also show the expenses incurred by the inspector while in the discharge of his duties under the provisions of this act.

Sec. 4. *Sale or Removal of Diseased Colony of Bees—Penalty.* Any one who knowingly sells, barters or gives away, moves or allows to be moved a diseased colony of bees, be they queen or workers, or infected appliances or who exposes any infected honey to the bees without the consent of the inspector, shall be deemed guilty of a misdemeanor and be liable on conviction before any justice of the county, to a fine of not less than twenty-five dollars ($25.00) nor more than one hundred dollars ($100.00) or to imprisonment in the county jail not exceeding thirty days, or both fine and imprisonment.

Sec. 5. *Sales after Destruction or Treatment—Penalty.* Any person whose bees have been destroyed or treated for foul brood, who sells or offers for sale any bees, hives or appurtenances, after such destruction or treatment, without being authorized by the inspector to do so, or expose in his apiary or elsewhere any infected honey, or other infected thing, or conceal the fact that said disease exists, shall be deemed guilty of a misdemeanor and on conviction thereof shall be liable to a fine of not less than twenty-five dollars ($25.00) nor more than fifty dollars ($50.00) or imprisonment in the county jail not exceeding thirty days.

Sec. 6. *Failure to Comply—Resistance—Penalty.* Any owner or possessor of bees who disobeys the directions of the inspector, or offers resistance, or obstructs said inspector in the performance of his duties, shall be deemed guilty of a misdemeanor and upon conviction thereof before any justice of the peace of the county, shall be fined not exceeding fifty dollars ($50.00) or by imprisonment in the county jail not exceeding thirty days.

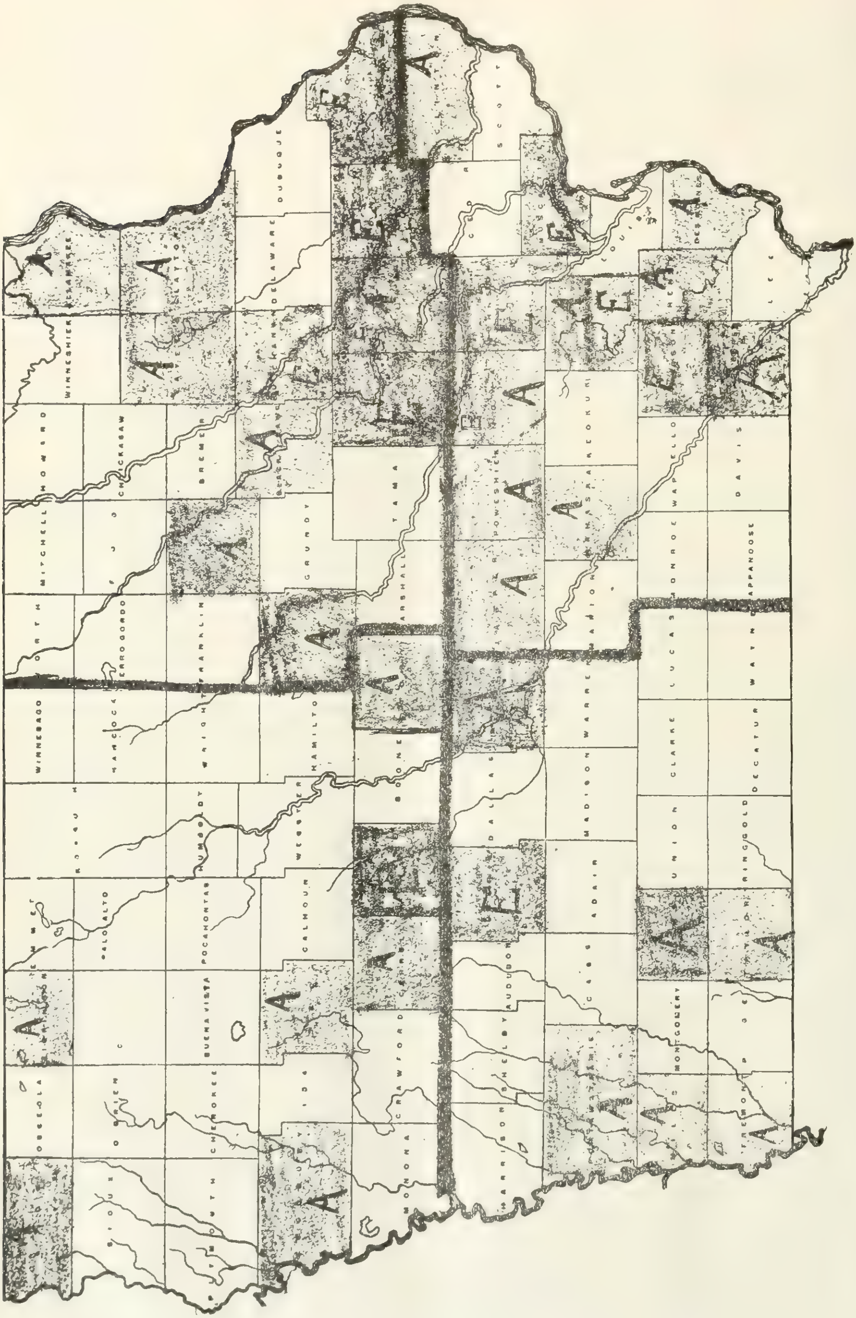
Sec. 7. *Compensation and Expenses.* Such inspector shall receive as compensation the sum of five dollars ($5.00) per day for each day actually and necessarily employed in the discharge of the duties as herein provided together with his expenses actually incurred while so employed, provided, that the amount to be paid on account of such expenses shall in no event exceed the sum of one thousand five hundred dollars ($1,500) for any one year, including salary and expenses of deputies.

IMPORTATION OF BEES.

(Acts of the 35th general assembly.)

Chapter 209. An act to prohibit the importation of diseased bees.

Section 1. *Diseased Bees.* It shall be unlawful for any person, firm or corporation to bring into, or cause to be brought into the state of Iowa, any apiary or honey bees infected with foul brood or other infectious disease, or bee destroying insects.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FRANKLIN
GRUNDY
TAMA
MARSHALL
POWESHIEK
KEOKUK
WAPELLO
DAVIS
MONROE
APPANOOSE
MARION
LUCAS
WAYNE
WINNEBAGO
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WEBSTER
DALLAS
MADISON
UNION
RINGGOLD
PALO ALTO
POCAHONTAS
CALHOUN
ADAIR
BUENA VISTA
AUDUBON
CASS
MONTGOMERY
OSCEOLA
O'BRIEN
CHEROKEE
IDA
CRAWFORD
SHELBY
HARRISON
MONONA
SIOUX
FREMONT
LEE
DES MOINES
A
E

Map showing counties where foul brood is known to be present, based on actual examination of diseased samples. Its presence is suspected in several others. A indicates American foul brood, **E**, European foul brood. The heavy lines indicate the four inspected districts.

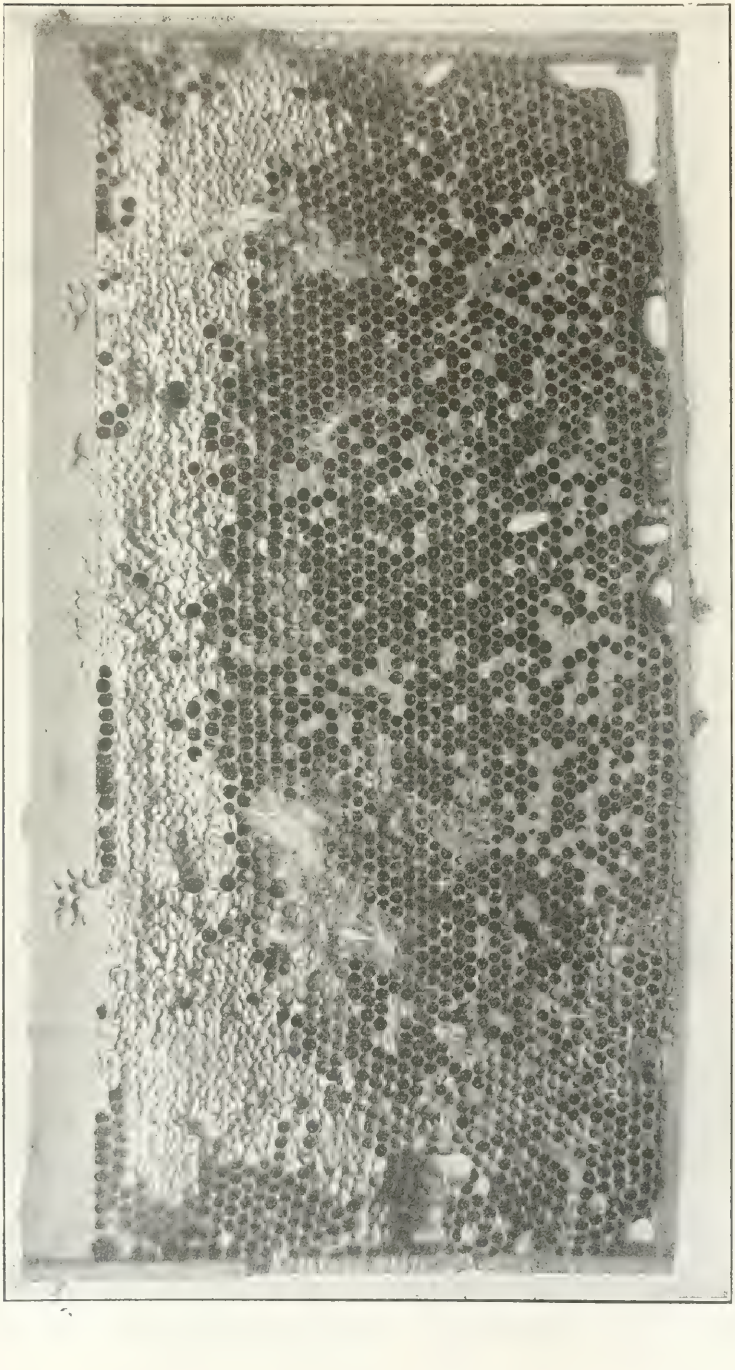


Plate I. Brood comb from colony affected with American foul brood. The dried down scales can be seen at bottom of cells. Three adult wax moths may be seen on the comb, and tunnels of the larvae are beginning to show. (Original.)

Sec. 2. *Certificate of health.* No common carrier shall accept colonies of bees for delivery at Iowa points unless the said bees be accompanied by a certificate of health signed by some duly authorized state or government inspector.

Sec. 3. *Violation—Penalty.* Any person convicted of a violation of this act shall be fined not less than twenty-five dollars ($25.00) nor more than one hundred dollars ($100.00).

DISEASES OF BEES.

The worst thing with which the bee keepers of Iowa have to contend at present is the brood disease known as foul brood. This occurs in two forms, called American foul brood and European foul brood. Both diseases are present in the state. In a few instances both are present in the same county and possibly in some cases in the same apiary. Where these diseases are present, large numbers of the young bees die in the cells, with the result that the colonies are greatly weakened, and eventually perish from the disease. The following description of the two forms is by Dr. E. F. Phillips of the U. S. Department of Agriculture.

AMERICAN FOUL BROOD.

American foul brood (often called simply "foul brood") is distributed through all parts of the United States, and from the symptoms published in European journals and texts one is led to believe that it is also the prevalent brood disease in Europe. Although it is found in almost all sections of the United States, there are many localities entirely free from disease of any kind.

The adult bees of an infected colony are usually rather inactive and do little toward cleaning out infected material. When the larvae are first affected, they turn to a light chocolate color, and in the advanced stages of decay they become darker, resembling roasted coffee in color. Usually the larvae are attacked at about the time of capping, and most of the cells containing infected larvae are capped. As decay proceeds, these cappings become sunken and perforated, and, as the healthy brood emerges, the comb shows the scattered cells containing larvae which have died of disease still capped. The most noticeable characteristic of this infection is the fact that when a small stick is inserted in a larva which has died of the disease, and slowly removed, the broken-down tissues adhere to it and will often stretch out for several inches before breaking. When the larva dries, it forms a tightly adhering scale of very dark-brown color, which can best be observed when the comb is held so that a bright light strikes the lower side wall. Decaying larvae which have died of this disease have a very characteristic odor, which resembles a poor quality of glue. This disease seldom attacks drone or queen larvae. It appears to be more virulent in the western part of the United States than in the East.

EUROPEAN FOUL BROOD.

European foul brood (often called "black brood") is not nearly as widespread in the United States as is American foul brood, but in certain parts of the country it has caused enormous losses. It is steadily on the increase and is constantly being reported from new localities. It is therefore desirable that bee keepers be on the watch for it.

Adult bees in infected colonies are not very active, but do succeed in cleaning out some of the dried scales. This disease attacks larvae earlier than does American foul brood, and a comparatively small percentage of the diseased brood is ever capped. The diseased larvae which are capped over have sunken and perforated cappings. The larvae when first attacked show a small yellow spot on the body near the head and move uneasily in the cell. When death occurs, they turn yellow, then brown, and finally almost black. Decaying larvae which have died of this disease do not usually stretch out in a long thread when a small stick is inserted and slowly removed. Occasionally there is a very slight "ropiness," but this is never very marked. The thoroughly dried larvae form irregular scales which are not strongly adherent to the lower side wall of the cell. There is very little odor from decaying larvae which have died from this disease, and when an odor is noticeable it is not the "glue-pot" odor of the American foul brood, but more nearly resembles that of soured dead brood. This disease attacks drone and queen larvae very soon after the colony is infected. It is as a rule much more infectious than American foul brood and spreads more rapidly. On the other hand, it sometimes happens that the disease will disappear of its own accord, a thing which the author never knew to occur in a genuine case of American foul brood. European foul brood is most destructive during the spring and early summer, often almost disappearing in late summer and autumn.

Sacbrood.

Fortunately sacbrood, which is commonly known by the name pickled brood, is not serious and usually disappears within a short time during or after the honey flow. Killing the old queen and giving a new one to the infected colony is usually all that is necessary with this disease. While the disease is not serious it is mildly infectious and may be spread from one colony to another. On two different occasions the state inspector has been called long distances to see what was supposed to be foul brood but what did in fact prove to be sacbrood.

The following description of this disease is by Dr. G. F. White of the United States Department of Agriculture.

Symptoms of Sacbrood.

"The strength of a colony in which sacbrood is present is frequently not noticeably diminished. When the brood is badly infected, however, the colony naturally becomes appreciably weakened thereby. The brood dies after the time of capping. The dead larvae are therefore always found extended lengthwise in the cell and lying with the dorsal side against the lower wall. It is not unusual to find many larvae dead of this disease in uncapped cells. Such brood, however, had been uncapped by the bees after it died. In this disease the cappings are frequently punctured by the bees. Occasionally a capping has a hole through it, indicating that the capping had never been completed. A larva dead of this disease loses its normal color and assumes at first a slightly yellowish tint. 'Brown' is the most characteristic appearance assumed by the larvae during its decay. Various shades are observed. The term 'gray' might sometimes appropriately be used to designate it. The form of the larva dead of this disease changes much less than it does in foul brood. The body wall is not easily broken as a rule. On this account often the entire larva can be removed from the cell intact. The content of this sac-like larva is more or less watery. The head end is usually turned markedly upward. The dried larva or scale is easily removed from the lower side wall. There is practically no odor to the brood combs."

SOURCES OF CONTAGION.

The spread of foul brood in the immediate neighborhood of the diseased colonies is usually by means of robber bees which visit those which because of their weakened condition are no longer able to defend their stores, and the disease is thus rapidly spread. Every bee keeper should be very careful to guard against the robbing of weak colonies. In case a colony dies from disease the hive should be at once removed, the contents destroyed, and the hive and fixtures thoroughly disinfected.

The past season I had occasion to visit an apiary where disease was suspected and found that when a colony had died the owner had opened it up and exposed the contents to the bees. As a result foul brood had been spread throughout his entire apiary and others of the surrounding neighborhood. In this case the owner was unaware that his bees were diseased and as a result his loss will be heavy.

Another source of the disease is the use of second hand honey containers. A large part of the western honey crop goes to market in sixty pound cans. These cans when empty are sold at a very low price and many bee keepers are tempted to make use of them. While these cans were being refilled they have often been visited by the bees with the result that foul brood has been carried to the apiary often in a minute drop of honey. Bee keepers have sometimes brought the disease home by the use of western honey for feeding in time of short supply of stores. I have been surprised at the extent of the complaint of the spread of disease from these two causes. There is so little to be saved by the use of a second hand container that bee keepers can hardly afford to take the risk. In case it becomes necessary to feed the bees, good sugar syrup should always be used unless the honey is known to be from apiaries that are free from disease.

The use of hives, frames, etc., in which bees have died is not safe unless they have been disinfected. While the disease sometimes appears from some unaccountable source, the bee keeper should take every precaution to avoid its spread.

The presence of foul brood in an apiary is a serious matter to the owner and cannot but result in serious loss. Frequent reports come to this office of the loss of entire apiaries, sometimes of hundreds of colonies from disease.

The Wax Moth.

It is a common complaint among the inexperienced that the wax moth is the worst thing with which they have to deal. The adult moth is a small grayish white insect, three of which may be seen at rest on the comb shown in Plate I. The larvae when nearing maturity are repulsive caterpillars nearly an inch in length which burrow in the combs and soon destroy them. The moth, however, is not nearly as serious a pest as is commonly believed. The expert bee keeper is seldom heard to complain of them, as he has long since learned that by keeping his colonies strong there is little to be feared. Colonies that have become weakened by disease fall an easy prey to the moths.

The writer has often had occasion to appreciate the work of this insect in neighborhoods where foul brood is prevalent. Not infrequently do we find hives where the bees have died of disease and been left without attention by the owners. When the bees first die these brood combs have the appearance of that shown in Plate I. Plate II shows the work of the moths in a little more

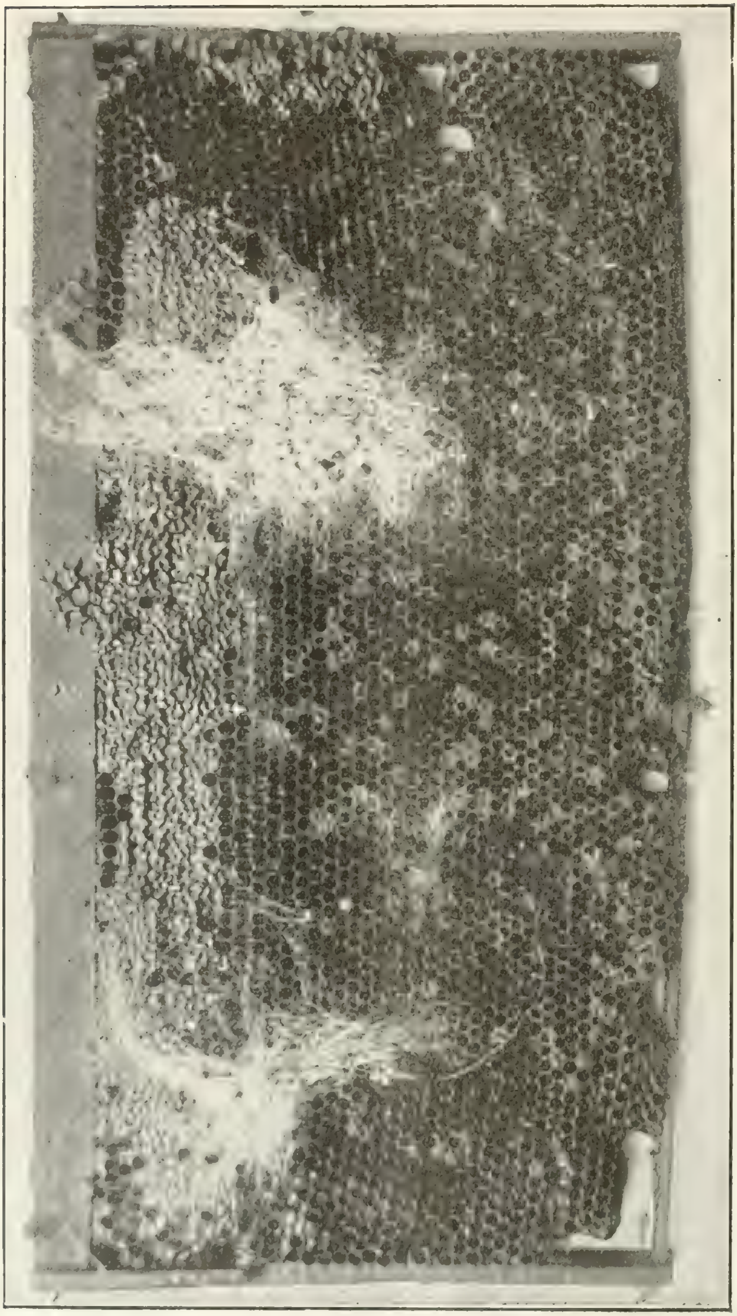


Plate II. Brood comb from colony affected with foul brood, showing work of wax moths. The sunken cappings are typical of American foul brood in advanced stages. (Original.)

advanced stage. Where the insects are undisturbed the combs are soon entirely destroyed, thus removing a menace to all the bees in the neighborhood. Where bees die of disease the honey left in the hive is soon carried away by visiting bees and the disease thus spread among surrounding apiaries.

In the case of colonies dead of foul brood, while the moth does not destroy the diseased scale the wax in the combs is so effectively removed that there is little attraction for robber bees who might spread the disease.

The Italian bee is much more resistant of moths than are the black or hybrids and persons complaining of moths are advised to requeen all colonies with pure Italian stock and take care that all colonies are kept strong. This done there need be no further uneasiness about the wax moth.

TREATMENT OF DISEASE.

It must be remembered that thoroughness is essential in dealing with bee diseases. One can no more expect to get rid of foul brood by careless methods than they can expect to prevent the spread of small pox or diphtheria without careful disinfection. European foul brood spreads very rapidly at times and seems almost impossible to control. At other times it is less malignant and is easily managed. Some of the most practical bee keepers of my acquaintance make a practice of taking diseased colonies to an isolated situation several miles from their healthy apiaries as soon as the presence of disease is discovered. In this manner they can treat the diseased colonies with less danger of spreading it. It is not an uncommon practice to destroy utterly the diseased colony together with hive and honey, where only a few colonies are diseased. This is undoubtedly the safest plan where the owner has a large apiary, as the resulting loss is small compared to the risk of spreading the disease among all his colonies. If the disease is far advanced and the colony weakened it is not advisable to attempt to save the colony unless it be united with another diseased colony. The hive and frames can be saved, however, if thoroughly disinfected. Fire is the best thing for this purpose, as ordinary disinfectants are not sufficiently strong to be of much use. Scorching the inner surface of the hive with a painter's torch, or painting with kerosene and burning it out is a common way.

AMERICAN FOUL BROOD.

This disease is rather slow in its progress but very sure and once a colony becomes infected its final death is certain unless the bees are removed to a clean hive and the infected brood destroyed. In the hands of the average bee keeper the McEvoy treatment or some modification of it is best. This is known as the shaking treatment. It is seldom advisable to attempt treatment excepting during a honey flow as results are likely to prove unsatisfactory.

The treatment is as follows:

In the evening after the bees have quit flying, brush or shake all the bees from the combs into a clean hive containing frames with foundation starters.

Bury or burn the old combs at once, not the next day.

Take great care that no honey, not even the smallest drop, from the diseased colony be exposed to robbers, or the disease may be carried back to the healthy colonies.

A second shaking at the end of four days is frequently recommended and sometimes necessary, but so large a percentage of cases are successful with a single shaking during the honey flow that it seems as well to recommend only one, with the caution that the bee keeper watch very carefully for the appearance of the disease among the shaken colonies and promptly treat any that show symptoms of the return of foul brood.

Thos. Chantry's method is to insert a dry extracting comb in the center of the hive in which the bees are shaken. They will proceed to store all honey carried with them in this comb which can be removed at the end of twenty-four hours and a frame with foundation inserted in its place. This seems to be equally effective as the second shaking and is much more economical. Edw. G. Brown of Sargent's Bluff who has had much experience in the treatment of foul brood reports this modification of the McEvoy treatment as very successful with him.

The object to be attained is to rid the bees of every trace of the diseased honey before new brood appears in the hive and any method that will accomplish this result is likely to succeed.

When a number of colonies are to be shaken it is well to replace the frames of brood in the old hives and to pile one above another on top of some diseased colony which may be reserved for treatment for a few days until the brood is hatched and thus save most of the healthy brood which may remain in all the hives. This plan has been carried out very successfully in some apiaries.

EUROPEAN FOUL BROOD.

Too much stress cannot be placed on the advantage of requeening all colonies with pure Italian stock where European foul brood is known to be present in the neighborhood. This race of bees is much more resistant to this disease than the common strains and will frequently pass through an epidemic without injury when all common stock will be destroyed by it. The experienced bee keeper can sometimes eradicate the European foul brood by caging the queen until all brood has hatched before requeening and thus avoid the necessity of destroying all the brood-combs.

In order that this plan be successful a sufficient time must elapse for disease scales to be removed by the bees before the new queen is permitted to begin laying. Pure Italian stock is also essential to success. This plan is never successful with American foul brood, as before mentioned, for no method has yet been found that will eliminate the disease germs from the combs. European foul brood, however, is the result of a different germ which the bees are able to clean out under favorable conditions. If one has this disease among common bees the best plan is to kill the queens at once and shortly introduce an Italian queen by the queen cage method. The queen should not be released too soon, however. This plan succeeds only with strong colonies.

Dr. Phillips of the U. S. Department of Agriculture strongly urges the shaking method for this disease as advised for American foul brood. In the hands of any but an expert bee keeper that is perhaps the best method for either disease.

In treating bees by the shaking method it is quite possible to save most of the honey and wax if one is very careful that none of it is exposed to the bees. The honey is perfectly wholesome for human consumption and if of sufficiently good quality may be used on the table. Once it has been melted and rendered into cakes there seems to be no further danger from the wax.

PUBLICATIONS RELATING TO BEES.

There are a number of free publications relating to bees that should be secured by every progressive bee keeper. Among them may be mentioned the following:

Bee Keeping in Iowa. Extension Bulletin No. 11, College of Agriculture, Ames. Address State College, Ames, for this bulletin.

All the following are to be had from the United States Department of Agriculture at Washington:

Bees. Farmers' Bulletin No. 397.

Comb Honey. Farmers' Bulletin No. 503.

Treatment of Bee Diseases. Farmers' Bulletin No. 442.

Rearing Queen Bees. Bureau of Entomology, Bulletin No. 55.

Report of Meeting of Inspectors of Apiaries. Bureau of Entomology, Bulletin No. 70.

Occurrence of Bee Disease in U. S. Bureau of Entomology, Circular No. 138.

Cause of European Foul Brood. Bureau of Entomology, Circular No. 157.

Sacbrood. Bureau of Entomology, Circular No. 169.

There are four journals relating to bee keeping published regularly in this country. The bee keeper who is interested will do well to send for sample copies and decide for himself which is best suited to his needs; the price of all alike is one dollar per year.

American Bee Journal, Hamilton, Illinois.

Gleanings in Bee Culture, Medina, Ohio.

Bee Keepers' Review, Northstar, Michigan.

Western Honey Bee, Covena, California

Any bee keeper will find it to his advantage to have two or three good books relating to bee culture in his library. The following are all good books and can be had from the publishers of the journals or from any dealer in supplies:

A. B. C. and X. Y. Z. of Bee Culture by Root. A splendid reference work.

Langstroth on the Honey Bee, by Dadant. One of the best of bee books.

Advanced Bee Culture. Hutchinson. Fine for the specialist.

How to Keep Bees. Comstock. By a well known woman author.

Fifty Years Among the Bees. Miller. Very interesting.

First Lessons in Bee Keeping. Newman-Dadant. A good beginner's book.

A Year's Work in an Out Apiary. Of value to the large producer.

Townsend Bee Book. Full of practical directions.

Alexander's Writings. The methods of one of the most successful bee keepers of modern times.

IOWA BEE KEEPERS' ASSOCIATION.

The Iowa Bee Keepers' Association is an organization which has for its object the elevation of the business of honey production to a place of eminence among agricultural activities. It aims to instruct and protect its members in their legal rights; to assist in marketing the crops, to secure recognition for the industry at state and county fairs equal to that offered to other lines, to co-operate in checking the spread of brood diseases, to spread information regarding improved methods of culture, and to render any other aid possible to its members or others interested in bee keeping.

At present the society is affiliated with the National Bee Keepers' Association and the membership fee of one dollar and fifty cents per year pays all dues in both societies, including the subscription to the official journal published by the society "The Bee Keepers' Review." Members wishing membership in the Iowa society only, without the benefits of the National Association, or the official journal, are required to pay only fifty cents per year.

All communications relating to the society or membership fees should be addressed to the secretary.

Officers for the year 1914 are:

President—Frank C. Pellett, Atlantic.

Secretary—S. W. Snyder, Center Point.

Vice President—J. W. Stine, Salem.

Treasurer—C. H. True, Edgewood.

Directors—Dr. A. F. Bonney, Buck Grove; Hamlin B. Miller, Marshalltown; E. C. Wheeler, Marshalltown.

Attorney—Russell E. Ostrus, Des Moines.

TREATMENT OF DISEASE.

EDWARD G. BROWN, SARGEANTS BLUFF.

My experience has been limited to sac brood and foul brood; the ropy kind that leaves one with a dark-brown taste in his mental vision and a raw chill around the bones of his financial constitution.

Of course, we all know what it is; simply a disease of the larvæ which causes it to turn to a ropy, dark-brown mass. But how many actually know what it looks like in the first stages? When there are only a few cells, possibly ten or twelve in a hive—the time when you can do the most effective work of checking and eradicating it?

I had an apiary system of about 500 colonies well salted before I woke up. I know a man who had written several articles on bee culture and who was always preaching the dangers of the disease, who took a one-frame observatory exhibit to the state fair, and when a man who had had considerable experience with the disease asked him if it was an exhibit of foul brood, he said he did not know that he had any in his apiary; but there were 25 or 30 infected cells on that comb and when they went to look over his apiary, they found a fair start all through the yard.

Judging from the articles in the bee journals Dr. Miller had things well infected and in the advanced stages before he knew it was there.

Now my advice is: first get acquainted and that, not for the love of it but because an enemy loses half his power if his tactics are well known.

When I say get acquainted, I do not mean by reading and talking about it or seeing an old dried-up sample, but by seeing a real, fresh, live case in the first stages and preferably not in your own yard, but in some of your unfortunate neighbors' and God grant, for your sake, that that neighbor be quite a distant one, too. If you are interested in bees to any extent it will pay you to go a hundred miles or more if necessary to get this introduction.

If a man can locate the first traces of infection in the first cases in his yard, he can control it much easier than when it has reached the advanced stages and his financial loss will be much less.

It is not the dark-brown, dried-up scale we want to know, but the light-brown, almost cream-colored, the just collapsed larva that we must know, and nothing fits us for its detection like actual contact and a little friendly advice from an afflicted neighbor.

The essential points in treatment are: to remove all the honey and old combs from the infected colonies and to do so in such a way and at such a time that no other bees will come in contact with it and in this way carry it to other colonies, and to accomplish this it is imperative that the utmost care be exercised.

It is best to do the work when there is a good natural honey flow on, and for my part I would not attempt treatment under but one other condition, and that would be where I contemplated an immediate move of the treated colonies.

If one has a yard in which one-third or one-half the colonies are infected it would be my advice to put the whole thing through a treatment at one time and clean up clean, providing he is reasonably sure that he has the source of his infection out of the way.

In severe cases and for beginners the McEvoy treatment is probably the best, although there are other good plans and some short cuts.

The McEvoy treatment is to shake onto inch starters and in three days shake onto full sheets of foundation and burn or render up all the old combs and the part built on the starters.

My short cut for this method is to shake onto full sheets of foundation, placing one dry, clean drawn comb in the center of the hive, then if the shake is made in the morning, I go late in the evening and quietly withdraw the comb, brush the bees off and replace with a full sheet of foundation. If the shake is made in the afternoon I wait until morning to exchange the comb.

It is necessary to be very careful with the shaking work and especially in taking this one drawn comb, so as not to scatter any of the thin nectar in it and to get the bees off as quickly as possible.

The theory of this method is that all the honey carried into the sacks of the bees after the first shaking, which is largely fresh nectar, will be used for wax building or stored in this dry comb and fresh nectar stored over it and when it is removed carefully, all the diseased honey is gotten rid of.

All the brood from the old colonies are set to one side in good tight hives and left to hatch and at the end of two weeks these hospitals are treated.

The most essential points in the treatment of foul brood are to know and locate the cases when they first start and to use all possible care in the handling of the combs and honey from these colonies.

I also believe much can be gained by breeding of queens, as I believe that robbing sometimes develops into a profession with some colonies and the elimination of robbing is one of the best controls of the disease.

The sac brood with which I have come in contact has, with the exception of two cases, been of very little bother and a good honey flow or heavy feeding have stopped it, although I have tried to change queens wherever it has shown up in any number of cells.

Black brood is a plague that so far has not come my way, and having had no personal experience, do not feel capable of discussing it.

As I understand it, it does not require such radical treatment, but that it works with a greater rapidity, and for this reason requires quicker action and closer attention.

HELPS AND HINDRANCES IN DEALING WITH FOUL BROOD.

J. W. STINE, SALEM, IOWA.

In writing on helps and hindrances in dealing with foul brood, I found it rather hard to determine which was the greater, the helps or the hindrances. From the standpoint of an inspector I will try to briefly line up the helps on one side and the hindrances on the other and come to some practical conclusion as I have found the situation in southeastern Iowa the past season, and I presume the situation here is not altogether unlike we would find in other places.

The Bible says: "No man liveth to himself and no man dieth to himself." This is true in beekeeping as in any other line of work. We are are either a help or hindrance to one another. This leads me to say that I believe the beekeeper himself can be either the greatest help or hindrance pertaining to the foul brood situation. I quite agree with Mr. Pellett in what he says in his article in Gleanings for December 1st, page 856: "Making the best of inspection," that the greatest good to the beekeepers of the state in general can come through some state-wide educational system." It is surprising how many beekeepers we find who know nothing about even the inside life of the bee-hive, saying nothing of the ignorance of bee diseases. Then there is the man who thinks he knows all there is to be known about bees, and is not willing to learn. He is the hardest to convince. One man whose bees we inspected this summer had known about foul brood for 25 or 30 years he said and held himself up as a model for other beekeepers. He let three swarms die out where we had marked the bees diseased and asked him to treat them. He failed to do so, and we had to go to the extreme as much as we were loath to do so and burn one weak colony that we knew would not winter, before he would believe we meant to carry out the letter of the law. This same man even made his threats that he would shoot the inspector if he came back to his place again, but we made up our minds at our first visit that he was like a barking dog that never bites, perfectly harmless only so far as his talk would harm. I am glad to say we left him in much better humor even than he was at our first visit, and we hope he may profit by this experience.

This is only one of the many cases: "Where ignorance is bliss it is folly to be wise." This is the most extreme case we have found, and as a rule we find the beekeepers ready to get all the information and help they can. One of the greatest helps we have is good foul brood and quarantine laws backed up by a loyal fraternity of beekeepers and friends. While the laws of the different states may differ somewhat, they are as far as I have been able to ascertain essentially the same. Iowa, I believe, has as good a foul brood law as any state in the Union, and what we need most in Iowa is a larger appropriation of money from the state to carry the law into effect in a more general and educational way.

Two other helps should be mentioned and those are the bees and the hives in which they live. Mr. W. D. Wright, of Altamount, New York, has the following to say in an address on the subject: "The Italian bee as a Factor in the Extermination of European Foul Brood," delivered at the New England N. S. & Canada Bee Inspectors' Convention at Amhurst, Mass., February 7, 1912: "Facts are greater than the actual reason in favor of the Italian bee." He said he always advised introducing the Italian bee wherever he inspected bees. At first the New York beekeepers were slow in using this method and after using it a while became very enthusiastic over the Italians. Some of the men used the dequeening method with Italians this year with good success. For several reasons I believe the Italians are better in fighting foul brood. In regard to the hives will say I much prefer the 10-frame Langstroth hive to any other kind, but the main thing is to have the bees on movable frames.

I have spoken of the helps in dealing with foul brood, first because I believe in looking on the bright side. We have spoken of it at greater length than we had meant to do, and will only mention or emphasize some of the hindrances. We said the beekeeper was the greatest help, and he may also be the greatest hindrance. We have already cited one instance among many others which were more or less of the same kind, and we recall one other instance of a case where we did not see the owner of the bees, but the boys tried to pilot us around through the blackberry bushes and underbrush in the back yard and show us the bees. Such a time as we had trying to find those bees. Finally we found all but one new swarm down in the corner where they left it after hiving. The boys watched me at a safe distance saying those were the crossest and blackest bees in nine counties. I proceeded to give the bees a good smoking and the poor things, so unaccustomed to such a thing as being handled at all scurried up among the combs in the old box glad to find a place of refuge in the farthest corner. I lifted the box from its bottom board and found it had been placed on top of bees and evergreen brush and the poor little fellows had to make their way through that brush all summer to gain the inside of their home. I gladly removed the brush and placed the box back on the bottom board, and not one of those little blacks offered any resistance. But such a way to keep bees. It is just keeping them, it isn't caring for them. Not a frame hive in the whole bunch and the only way I could get a peep at their brood was to tip the boxes up or break a piece of comb out of the hive to examine it. It is nearly impossible to do even this in some cases, as the hives or boxes are nailed to the bottoms, and some are so badly decayed that it is nearly impossible to handle. Thus we find in this case as in many others, the man, the bees and the hives are the greatest hindrances.

ADVERTISING.

A. F. BONNEY, BUCK GROVE.

Our handsome secretary, Mr. Snyder, coaxed me a long time to talk to you today; that is, he wrote me, stating he would like me to choose a subject, and I picked on advertising. When I told wife that I was going to talk here today she giggled.

"You do nothing but talk," she declared. This is a libel, but I may as well confess that I have a very discerning little wife, the best one I ever had, and I did not get her by advertising for her, either. To show you how cute she really is, she remarked to me one day that "a bee hive is just like a home. The men do all the flying about, while the wives stay at home and raise the families."

Bee men differ from other, common people, in that to properly discuss a question they must know what they are talking about, and therefore I ask: What is advertising? Well, a dozen women at a pink tea will come as near doing it as anything I know of, but that is not what Webster says about it. I read there that advertising consists in giving public notice, or describe with a view to sale, and that covers the ground, but since that definition was formulated there has been great changes in advertising *methods*. In the good old days a few words on a brick wall, a fence or a rock, or some circulars scattered broadcast sufficed to inform the then scanty population of the small affairs of the time, in some cases a bellman was all that was needed, while today the English language is overworked to tell in newspapers, magazines, personal letters, catalogues and postcards the merits of the things we have for sale. One big mail order house today pays out more for advertising than the entire business of the United States did 75 years ago.

Now, let us consider this definition in its relation to honey. "To describe with a view to sale." "To make known," says Mr. Webster.

I do not care to antagonize anyone in this matter, though wife declares I am in hot water half the time from that cause, but I do think I know a little about the art, "craft or science of ad writing," and I state emphatically that honey is today just as well known as it ever will be. It is, very likely, the oldest known sweet; it has been an article of human diet for untold ages. So well known is it that city people, some of whom never saw a cow, know that it is the product of the bee. A pretty young girl from Chicago was visiting in the countryside, and coming to the table for the first meal saw a big platter of honey. She looked at the pile of sweet with a radiant smile. "I see you keep a bee," she said to her hostess.

Why spend money to make honey any better known to such as her? Still, honey may be advertised to some benefit, and in this connection I will mention two forms of advertising to show what may apply to our goods. These are the continual and occasional ads, and if I am any judge, only the occasional will do much with our goods, to producers, I mean, and particularly the small ones. I take this stand because our supply is not *continuous* and cannot be made so. Even if it was a perpetual thing on the market is no sign it will do any good to advertise it, for like eggs it may not need it. Four hundred million dollars' worth of eggs are sold in the United States annually, and I hear no one proposing a national campaign of advertising for hen fruit. Egg producers pay not one cent in advertising. Biddy's cut-cut-cut-ca-doo is the first and only notice that fresh eggs are on the market. You can search the world over and all the advertising about eggs you will find will be the signs in the stores of "eggs." Sometimes the sign will read "fresh eggs," and sometimes they are fresh, and if it is not possible to profitably advertise eggs is it to make honey known? I think not, for it is already known as well as eggs are; in fact, I should not be surprised to learn that honey was used as a food even before eggs were, for it is mentioned in the book of Genesis, and was in common use among the ancients. When, in 1905, some explorers opened an ancient tomb in Egypt they found a jar of honey which was still liquid and still retained the characteristic odor of honey. It had been lying there more than 3,000 years.

Let us take a squint at honey advertising from another angle. It is an axiom in advertising circles that it does not pay to advertise unless it is done all the time, after one has something to sell, for you can no more sell with last year's advertising than you can grind with the water that is passed. It does not pay to advertise honey in this way, because the yield of honey is variable, some seasons we have immense crops, while in others we have none, and there is no possible way known to man and the pure food law to supply the deficiency. Other things, as the glucose messes and breakfast sawdusts are advertised continuously, because the supply can be kept up, but if we had a continuous distribution of honey could we advertise as these abominations do? No, little children, because the fake syrup fellows and the hundreds of breakfast food concerns spend more for advertising in one year than the entire honey crop amounts to. Twenty-four million dollars. Do you believe it? I do, for I understand advertising, and I know what space costs in the larger magazines. One dollar a page for each thousand of circulation per month. The Saturday Evening Post on that basis should get close to $1,000 a page a month, and the Karo Kusses buy lots of that kind of advertising room. I know, also, that there are something like 20 or 30 food concerns in Battle Creek, Mich., alone, and they are all heavy advertisers.

I am betraying no advertising secrets when I tell you that to do business successfully by advertising there must be a margin of about 90 per cent profit. This means to sell some article not known to or needed by the world, to create a demand. There is that much profit in the goods I have mentioned. Think of this in connection with honey. Consider for a moment that if an article sells for $1.00 the cost must not exceed ten cents. This will apply to such goods as automobiles, sewing machines and many other manufactured articles. Breakfast foods are made of grains which cost far less than a cent a pound, while the ultimate consumer pays ten to twenty-five cents a pound. They are advertised extensively, as you all know. In the case of a honey failure we should have to stop advertising were we doing any, but the sawdust manufacturers just put on a little more steam and buy a little more oats and rye and make the supply equal to the demand. The glucose people do the same by buying a little more corn and a few more carboys of sulphuric acid.

I have had the statement contradicted that there is a difference of 90 per cent between the cost and selling price of automobiles, but not long ago ten cars were destroyed in a wreck, and the company sent in a claim for $10,000. The railroad's expert got in his work, however, and the auto manufacturers got just $1,000, or $100 each for the machines. My father, still alive at 85, was a hardware manufacturer for many years, and assures me that sewing machines that sold for $100 cost less than $6, and bicycles the same. It is the constant advertising that costs.

While it is not likely that we can ever inaugurate a campaign of advertising for honey such as is carried on for glucose, breakfast foods and patent medicines, as many beekeepers think we can, I believe individual stocks may be advertised advantageously, but to do so one must understand the art, for such it is. It would be well for the man who has goods to sell to consult an ad writer, but for the bee man the cost would be prohibitive, therefore he must do it himself, and perhaps I may be able to give you a few hints to aid in future efforts.

I am going to begin by telling you a great advertising secret, and that is that no man alive can tell what an ad will do until it has been tried out. I made a considerable number of postcards before a fool thing caught the popular fancy and brought me a great deal of trade. I assure you solemnly that millions of dollars are annually wasted in advertising, particularly trying to popularize some secret nostrum, commonly called patent medicines, while *injudicious* advertising costs honest advertisers vast sums.

Now that I have started telling trade secrets I will confide to you that the fewer words there are used in advertising the better. The reason is that one person may wade through a two-column ad in a paper; two may read a one-column ad; one hundred may peruse a half-column display; five hundred will see a four-inch story, a million will read two lines, while even the kids on the street will see and read the one word HONEY. They know what it is, and want it. But this one word says and tells nothing about my particular goods, so I added the word Bonney, for no other reason than that it has a sort of a jingle. Bonney Honey. To show that it is an ad I hitch on the word Eat, making it read: Eat Bonney Honey. Only three words, but in connection with a picture on a post card they were enough to sell my crop.

Most ads are far too long, while some are carelessly written. "The more you drink of our soda water the more you will want of it," is not a good ad for a thirst quencher, but it was displayed over the front of a drug store for years, and I remember a pamphlet gotten out by Mr. York while he was editing the American Bee Journal which stated plainly that if you saw a cake of honey in a jar surrounded by liquid honey it was proof positive that it was adulterated, yet that little book circulated for years and probably a million of them were sold before I called their attention to it. Dr. C. C. Miller, who wrote it, responded to my howl, thanked me for calling his attention to it and changed it. At the best, however, it was a poor ad, for it was far too long, because people will not wade through so much matter, and if they did they would find a lot of literature about honey as a food and a medicine.

Regarding the food value of honey, I think ink is wasted in lauding it, because people do not buy honey on account of its nutritive value, but simply because it is a delicious sweet. Of course I know that our goods is a concentrated food, and predigested at that, but I also know a man would starve to death on it in a short time, for man must have a mixed diet, cereals, meats and sweets, and he can live longer on the coarser foods than on the finer.

Much is written about the medicinal value of honey, but, as a rule, by men who have no medical education. Let me assure you that honey has no medical properties whatever, and my authority is the United States Dispensatory, which is the last word on medical substances and drugs.

This work says honey has a slightly cathartic action. I think it is slight, for I have often eaten a pound at a sitting, or a standing, rather, while I was at work and noticed no results save a loss of appetite for my meals. As to cooking recipes, people will not use honey in place of sugar, because it costs too much. Of course the manufacturers of cookies use some, but only the cheaper grades, and the consumer pays.

The next thing to be considered in an ad is the illustrations used. Mr. York, again, used to get out a postcard for sale—with a bear, and a spoon and a skep on it, and a text: "Come spoon awhile and bee my honey." I wrote him about it, and I remember that he resented my criticism. However, I do not see it advertised any more. It was not a good honey ad. Neither a bear nor a spoon have any place on a honey ad. Of course the same criticism might apply to one of my cards, but the proof of the pudding is in chewing the string, and a picture of an autobile wreck with a squalling baby, a dog on top a sign and all the rest merely called attention to the sign, which read: "If anything happens while you are traveling near Buck Grove stop and get some Bonney honey." One of those cards sent to the Council Bluffs postoffice brought orders for a hundred pounds of honey, and I had several similar experiences.

To be of permanent value an ad must be true. This applies to foods and other things, but need not to patent medicines, whisky, breakfast foods and face powders, for no one knows what they are made of.

And don't brag, for somewhere, in some other puddle is a toad as big as you are and he may be a deal better looking. No one cares for your family history when looking for honey. The fact that you and yours have been beekeepers for generations will not add one little bit to the pulling power of an ad. Go hide yourself in a honey can.

Aside from brevity oddity in an ad is a good thing. Theodore Hook made a bet with a friend, a century ago, that he would get up a word that everyone would be using by morning, then went out and wrote QUIZ all over Londontown. Today someone would snap it up to use in advertising a pill.

It is useless to advertise when you have nothing to sell, and for that reason it is impossible for the most of us to profitably advertise honey continually. Our crop is often limited, and when once we stop advertising we are forgotten. Under these circumstances it is a waste to put much money into advertising.

It does not pay to spend two dollars to sell a one-dollar article.

It does not pay to advertise prices unless they are low, and honey prices should never be.

I have only touched on some of the salient points of advertising, for it is a mighty question, someone is even using the daily papers to print extracts from the Bible; advertising the Good Book, of course. Will it pay? Not where only eight or ten lines are used in the entire paper to quote a text while whole pages, illustrated, are given over to detailing what a crazy murderer is doing, the story of an ocean disaster or some horrible murder or other revolting crime.

Our business is a small one compared with many others, but I think personal, individual advertising can be made to pay, and I also incline to the opinion that personal advertising is the only kind for the small honey producer, the man with only honey enough to supply the local demand, if he can find that demand, and by personal I mean the individual appeal to a community, and for this purpose there are few better things than a government postcard printed and sent out; and here comes the test of the ad writer, for few men can write as they would talk. In casual conversation a man will say:

"Hello, Smith. How's everybody? Say, have you bought your honey yet? No? Well, I have a lot of very nice white clover honey that is thoroughly ripened that I am selling at a shilling a pound. Can't I send you up a can? All right. Thanks." When, however, this same man tries to write a postal ad a card will not hold it if set in small type. He tries to give a history of the bee business from the year one, makes a few digs at his neighbor beekeeper, brags about his honey *ad nauseum*, then wonders why he does not sell.

I might give you a few forms for this postcard manner of selling, but to do so successfully I'd have to know your market thoroughly. However, in a *general* way a card might read:

"I am now taking off a fine crop of white clover honey. I have both the comb and extracted, and shall be pleased to supply you at regular market prices."

Now what more can one say to sell honey in a community where he is known? Quote prices? Declare the honey is pure? Neither. They can find the price when they are ready to buy, and to declare an article is pure is to advertise the fact that there are adulterated goods.

If you have been selling in a community for years, you might say:

"I am again ready to fill your orders for comb and extracted honey. It is white clover honey, and very nice."

Anything more would distract the customer's attention from the fact that you are now ready to sell.

I do not have to tell you that if a man is producing honey by the dozens of tons he will require different advertising than the man who has but a thousand pounds to sell. Generally you find that such men have a regular market. Otherwise, they advertise in the bee journals, and to save time writing letter quote their price. At the same time you will find they have a home market, also, selling in all sized containers from a pound or less up. However, there are but few such men in the country, while there are hundreds or thousands who have small crops to dispose of. These are the ones I hope to help, if they survive my talk.

MARKETING THE CROP.

W. P. SOUTHWORTH, SIOUX CITY.

Marketing the products of the soil or the products of manufacture is the greatest problem today. Almost anyone can produce something of real value to his fellow man from the soil or manufacture articles of use or comfort, but to tell your neighbor about these articles and get him to buy them is another problem, especially so when you have to go to a distance to find customers. This solicitation and transportation of your article cost, and then you are confronted with the problem of keeping the price of your article within the purchasing power of the consumer, or within the limits of competition.

Honey is no exception to this rule. The world is really hungry for honey and millions of people would enjoy better health if they used honey instead of the cheap injurious substitutes for Nature's best sweet. And yet if I was asked to name one of the hardest lines of merchandising today I would say "honey" because people are being weaned away from honey by the constant presentation of other substitutes which are sold at a uniform price. There is a feeling of suspicion in the minds of a great many people that the article offered is not really honey and that they are being deceived and paying someone a large profit for doing it. This condition will continue to increase as disease among bees puts the production of honey into the hands of the specialist, a condition that is coming rapidly.

If all honey tasted alike it would be much easier to convince the people that they were buying honey, but the great variety of taste is one of the hindrances to the more extensive use of honey, but when honey producers come to understand the necessity of building up a market for their product they will unite and blend their honey (in this I refer to extracted honey and it constitutes the largest part of the commercial honey) so that people will get a uniform article.

Under our present system of marketing it is the producer of a small amount of honey that is establishing the retail price of honey and compelling the extensive producer to sell his honey for less than it is really worth.

If a man is willing to sell his honey to a consumer for a price no higher than he would get for it at wholesale he is establishing a retail price because the honey merchant must buy honey so as to compete with his surrounding market conditions.

It is natural at first thought for the honey producer to think that there is an enormous profit for someone in handling his honey when he sees his choice honey for which he has received 6 cents sold to the consumer for 18 cents, but he does not stop to consider the first cost of a sack of corn meal or a package of breakfast food, or a bottle of olives.

The farmer receives about 10 cents for the corn that is required to make a sack of corn meal that is selling for 35 cents, and 3 cents for the wheat that goes into a 25 cent package of breakfast food, and the process of making meal or breakfast food is but little more expensive than bottling honey and everyone uses the former and is demanding it while the demand for honey must be created and a large part of the people never eat it.

It costs to handle any commodity, and every time a quantity of honey is shipped, stored, and interest and taxes paid upon it, it must increase in value until the consumer purchases it, and naturally the producer reasons that he will market his product direct to the consumer and cut out a lot of that expense and make a saving to the consumer, but does he do so? If he is a normal man the time spent in preparing and marketing his honey is worth as much as the time of any other normal man and he has an investment in the honey and depreciation on his buildings and equipment which are equal to storage and interest, and why should he not have pay for them.

Do not understand that I am advocating that all producers shall send their honey to some of the large markets instead of selling it at home, for that is not what I mean, but I do wish to be understood in this. If the producer wants a higher wholesale price for his honey he must inform himself as to what it costs to do business and be willing to establish a retail price for his product that will allow his servant, the honey merchant, a reasonable compensation for his services in preparing this honey for market and finding a market for it. For the merchant is the servant of the producer and the servant is worthy of his hire.

We of the rural class feel that it is an injustice that we must sell our product in the lowest market and buy our supplies in the highest market, but while the mind is taken up with this seeming injustice we do not realize that we have the key to the great treasure house of the Creator and can draw on His resources each season and that one dollar in the rural life is equal to two in the city, because so much of the family living comes from the soil and is fresh and nutritious.

The business world has learned that it must co-operate and that much must be in common. To all outward appearance the keenest kind of competition exists in the business world, and competition is keen, but that competition consists in better service, not in price cutting, for they have learned that that thing means ruin.

We of the honey industry are business men, or should be, and should understand that we cannot build up a business by selling our product cheap; we must give service in the way of good quality and attractive package and publicity, thereby increasing the consumption of honey.

As an illustration I will use the cases of Jones and Thompson. Jones is getting a price for his honey that makes the production reasonably profitable and worth while marketing it. Thompson is producing a little honey and disposes of it at a lower price. Mrs. Consumer has bought of Thompson, but he is sold out and she goes to Jones who is asking a higher price, but she will not buy because his price is too high according to her estimate and consequently two persons are injured. Mrs. Consumer wanted honey but did not get it, and Jones lost a sale.

We need to get together in the matter of prices for our honey and we need to understand the work of the other fellow if we are depending on selling honey to a merchant, for under the present system the prices of honey must go lower and production diminish, for men are not going to invest in honey unless they can sell it at a profit and consequently must buy it considerably below the local retail market, and it is the necessity for this cheap honey that is flooding our markets with the cheap Cuban and Hawaiian honey that the wholesale grocers and large packers must buy in order to put out a honey that will compete in price with the local honey produced and make the packer a profit to pay for his services.

I am not advocating a combine of beekeepers to boost prices to where honey will be out of reach of the common people for honey is one of the great gifts of the allwise Creator and his people would be better off if they used it rather than the cheap injurious substitutes. Higher prices would not curtail the consumption of honey, but would give the fraternity a margin of profit that could be used in publicity of honey and educating people to the use and need of honey. No doubt you think I am talking as if honey was comparatively a new thing to people instead of being as old as the history of the human race. If you meet as many people as I do that know nothing whatever about the production of honey, but think that they know it all in regard to how the comb is made artificially and filled with a cheap syrup and masqueraded for comb honey, and when you offer extracted honey they turn away disgusted, for they are sure that that is the vilest of adulteration although the label is all covered over with state and national guarantees, you would realize that publicity in regard to honey and something besides the individual names of Thompson and Jones is necessary to give it meaning to the public. Children must be educated to understand what honey is and how it is taken from the combs or how the bees build the section honey that they see in the stores.

How many in this assembly can tell what it costs to produce a case of No. 1 comb honey or to produce 100 pounds of extracted honey? We say we live in a commercial age and yet we do not stop to consider these things, but in many cases the little honey crop is considered a by-product, a side issue, or clear velvet in connection with the farm, orchard, or poultry business.

Bee supplies at first cost are quite expensive and it takes time to fill them with bees and every season does not yield honey like the past has done and if one is unfortunate enough to lose his bees the salvage from empty fixtures is very small, therefore the business of producing honey must be profitable or thinking men are not going to engage in the enterprise.

SELLING HONEY DIRECT TO CONSUMER.

J. L. STRONG, CLARINDA.

To produce a crop is one thing, but to sell it to the best advantage is quite another. I find by the market reports that extracted honey in 60-pound cans is selling for 7 to 10 cents per pound. At these prices what does it net the producer? It will cost about 1½ to 2 cents per pound for cans to ship in, including freight and drayage. Then freight and commission will be about 2 cents more. From these figures the crop will net the producer from 4 to 6 cents per pound.

In selling comb honey we find about the same conditions, except the danger of it breaking if we ship as local freight.

The one who sells to the consumer realizes from 10 to 15 cents per pound, as it is customary to charge for the can or pail that the honey is sold in.

From the above it seems that it would be a good business proposition for one who can to sell his own crop, thus filling in the time when the flowers do not yield honey and the bees are enjoying their long winter nap.

How have I worked up the trade? It has not come spontaneously without an effort, as the dear people do not take naturally to extracted honey. They must be educated to the use of extracted honey. To sell it take a sample of the best in the most attractive shape and call your prospective customer's attention to it. Explain the difference between this and the strained honey of our fathers, and if this does not have the desired effect, give a sample sufficient for each one to have a taste and thus be able to express an opinion.

I have made several good customers by giving a sample to a prospective buyer. I have never tried anything that would convince one as quick of its purity and fine flavor. It also proves to them that the money is not all that we are after.

My trade is taking all the honey that I can produce and frequently I have to buy to supply the demand.

"A SEASON'S WORK."

F. W. HALL, COLO, IOWA.

First, I wish to say about "season's work:" Get ready a season in advance, as a good chopper would not be apt to "make the chips fly" very fast if he went out to work with an ax in poor condition for chopping.

If you are a comb honey producer, get the sections all ready and in the super, ready to place on the hives at a moment's warning. Don't be satisfied with a mere starter in the sections, but full sheets, with bottom starters.

One of the most important things is my work table, used mainly to unsuper and clean sections. Am sorry that I was not able to bring it along, but will endeavor to tell you of it so you will get the idea. To make: Make a shallow tray four or five inches in depth and about thirty-six inches wide and sixty to seventy inches long, or as much larger as your business calls for. Make another tray, same dimensions as the first. This second tray will become the table top, and should be made of lumber ⅞ inch in thickness. Take four square posts about eighteen or twenty inches in length and nail one in each corner of the table top, the other ends to be nailed in the corners of the tray. Next take a piece of burlap, canvas or most any kind of stout cloth and tack it on the inside of the tray. This should be tacked on the inside and the long way of the tray. This will then be the lower part of your apron. Next take a piece of spring wire long enough to reach almost around the waist or far enough to grip the sides. This should be sewn in the upper part or waist end of the apron.

To use the table sit on a stool, spring the wire about the waist and with a super of filled sections, wrong side up, knock out the follower, loosen the super from the holders, lift the super off and, with the scraping knife, made as this one here, pry apart the sections, scraping them, also the section holders and separators and place them back into the super.

The beauty of the arrangement of the aprons is to keep all the wax and propolis off the clothes and floor and guides it down into the tray below where it can be shoveled out when filled. All that is necessary to remove the apron is to step away from the table. If two people are to work at the table, duplicate the apron.

Next is an arrangement for cleaning off the top bars of the brood frames. Take a light box as high as the hive on one side and four or five inches higher on the other, set it behind the hive, tight up against the back end of it, and, with a common garden hoe (with a shortened handle) hoe the propolis and wax off the top bars into the box behind. Of course the bees must be driven down out of the way and the hoe worked lively.

You will be surprised at the amount of wax that will accumulate from four or five hundred colonies and the comfort in handling the frames after cleaning. The extracting frames of course will be cleaned with the dull knife at extracting time. There are many other handy appliances which can be used to advantage, but what might satisfy one, might not meet with the approval of another, and, for that reason I will not take up more of your time.

I wish to give you a "season's trip" through my bee yards and get you back in time for the evening train home, so I will have to hasten along and stop only at important points of interest. Taking bees out of the cellar—this may seem a very commonplace affair, but in reality it is an important proceeding. I have about four hundred colonies in six yards. Each yard has a wintering cellar over which there is a bee-tight building in which the extracting is done and in which the supers are stored when not in use.

When the time comes to get the bees to the summer stands, with the help of another man I spread four or five thicknesses of newspaper on the quilt and place the cover over the papers, stuff the entrance with fine blue grass or an entrance closer, except a small space, and with two hives on a stretcher or "carry-all" it is but a short time until we have them all on the summer stands. As we place them on the stands, if they appear too light, or need any other attention, we place a stick of some kind on the cover and, after all are out, those having been marked with a stick on the cover are given a comb of honey from the honey house, or adjusted according to their needs, then we are ready to drive to the next yard.

A few days later when the weather becomes suitable for opening up the hives, all are examined for queens and fixed according to what seems to be the best for them, not forgetting to keep a close watch for any signs of disease, sticking a small peg (painted red) into the ground at the left side of the entrance where we find suspicious cases and in front of the left entrance for those found diseased. If treated, I move the peg to the center of the entrance, and, if after a week or so, they show no disease, move the peg to the right of the entrance and add one peg for each examination made thereafter until fall. Then if no disease shows remove all pegs.

Previous to the honey flow (clover) I keep going the "rounds" of the yards looking for their needs, spreading their brood nests as their condition and the condition of the weather will permit, adding super room from time to time as needed. Equalizing by the exchange of brood frames until about eighteen or twenty days before the expected end of the honey flow. By this time the most of the colonies are fairly "boiling over" with bees, and where there are any drone cells to be found, they are filled with brood. Some of the most forward colonies are building queen cells, and now, it is time to begin the dethroneing operation. With a boy to handle the smoker and another man to help look for the queens, we start in on the yard, killing all the queens that are two years old and all of the others except what are needed to fill out what hives are empty from winter loss or be increased if others are wanted. Perhaps a colony may be in such a condition that it may be run through the season with little chance of swarming. These are given more room if needed and passed by.

With this system of handling the swarming problem, it is necessary to have some easy method of record to keep account of what has been done from time to time in the yard. Book records do not appeal to me, and for that reason I use the following: In the first place I secure three wood pegs for each hive. These are about five inches in length, and are sharpened at one end and used as follows: As we kill the queens, if we find one that we do not wish to kill, we stick one, two or three pegs on the left side of the hive, this means a laying queen. One peg means a fair queen, two pegs a good queen and three pegs a choice one. The last are usually used for breeding if needed for that purpose. If the queen is killed, one, two or three pegs are stuck behind the hive to designate the standing of the queen killed. Nine or ten days later, at the time of cutting the cells, leaving a grafted cell or one of its own kind, one peg is stuck in the ground at the right of the hive, this means a cell. At the next examination which is made a week or ten days later, they are examined for queen or eggs, if only a queen is found, two pegs are stuck at the right of the hive, if eggs are found, three pegs appear. These pegs remain in this position all summer and the record is marked on the hive before they are removed to winter quarters. This record is made with pencil on the side of the hives. By these records, a glace at the hive in the yards will enable me to tell the exact condition of each stand at any time.

A yard of seventy-five or eighty colonies can be gone over by two men and a boy in a day. That is, they have ample time to either kill queens or cut cells.

The next thing is to go over the yards again in nine or ten days and cut out all the cells but one in each colony. Saving all of the choice cells from the best breeding queens and destroying all of the poorer stock. A number of nuclei are started from the surplus cells to supply any colony which may fail, or supply any colony which may have a poor grade queen.

Whenever a comb that carries a good cell can be exchanged, we do so, otherwise a cutoff cell is slightly pinched between the combs just above some brood, or pinned on with a small stick or toothpick. A little caution should be exercised at the time the queens are killed to see that there are no cells left that might hatch before cell cutting time. In other words, cut all cells as well as kill queens so that all of the cells will be of the same age. We also see that there is no unsealed brood in the hive at cell cutting time, as cells might be started and swarm when the grafted cell hatches.

After thoroughly going over a yard in this way a man could not earn his board hiving swarms. I have not handled swarms enough of late to keep in practice. Have been asked how it will work in the production of comb honey to kill the queens in this way. Why not? There are as many bees for the harvest as there would have been, had the old queen remained in the hive, since it takes twenty-one days to rear a worker besides the brood is not there to require feeding for a part of this time, and, by the time the fall flow is on, the young queen has gotten acquainted with all of the levers of egg laying and the colony goes into winter quarters with a hive full of young bees. Nothing else hindering, that means good wintering, and, good wintering means a good crop.

After the combs get a good start of honey in them, I try to go over my yards and change the empties to the middle, and those with honey in them to the outside of the supers; this makes uniform combs at extracting time. At this round all of the brood nests are examined for queen or eggs and marked accordingly.

A little about extract and extracting machinery and I am done. When the honey is ripe and ready to extract I load my outfit of tanks and four-frame automatic extractor—Root's make—steam capping knife, and sufficient five-gallon cans to hold the day's work (about one ton). As the yards are six or eight miles out, it is well toward ten o'clock before we get there. Team off, and turned to the pasture, the machinery is gotten inside the building, and, in less than five minutes, all is set ready to run. Honey is rushed into the honey house until noon, when fifty to sixty supers of nine frames in ten-frame supers are in the house. The fire is started under the cap knife boiler, and, while we eat our dinners, the capping knife is getting hot. If it is too cold and the honey is too thick to strain well, a two-wick oil stove is set under the extractor.

At five o'clock we are ready to start home, and, while the man gets the team, I rush the empty supers back on the hives. The five-gallon cans having been washed off, carried out and loaded as fast as they are filled. The position of the machinery in all of the houses is the same. First, to the right of the door, in the corner of the room, is the extractor, mounted on a low bench. A two by four about twelve feet long is shoved under a block nailed at the end wall of the house, and sprung down over the back of the extractor and locked under a block nailed to the side wall. This holds the extractor solid and is all the fastening needed. Five seconds will have it ready for use.

Next to the left is the comb box, next the capping tub, then the stove and steam boiler, and across the back end of the room are the honey and other tanks. An electric bell which is worth its weight in gold is used to tell us when the five-gallon can of honey is full. The arrangement is simple and is made ready for use in ten seconds. It takes up scarcely any room in the house or wagon. The trip arrangement is simply a short board with a short piece of number nine wire fastened across it, a short distance from one end, this is used to act as a tilting fulcrum, a brick is laid on the other end at a point that will balance the can of honey when it is full. When the can is almost full it tilts down and makes the electric connection, rings the bell for us to either change cans or shut off the flow of honey.

When the capping tub is full of caps I break them up fine and empty them out onto a strainer cloth that is spread out over another coarsely woven burlap cloth that is tied over the top of a can and allowed to bag down enough to hold the tub of broken up caps. When the cap tub is full again, the four corners of the strainer cloth is caught and the "wad" is dumped into another can with a screen bottom. At the end of each day's work this is hauled home and the next morning, after drawing off the accumulated honey at the bottom, it is dumped into another tank in the storage house at home, similarly arranged and allowed to drain until time to melt up the wax. My storage house is a building 24x68 two stories high and in it I have a great many handy contrivances that I would like to show you but time will not permit.

You will notice that I have said nothing about marketing the crop, and time will not permit my saying anything further than that my home market takes a great deal of honey. Then I attend the farm sales and other gatherings with my "honey rig." I have also a large mail order trade. Whenever I go any place on the cars, or otherwise, my little five-pound pail of honey goes with me. While there is much yet that I have left unsaid on the subject, yet I think that I have given you a pretty good glimpse of my season's work, and if I have said anything in this short talk that will enable you to keep bees better, or rear better bees, or helped you in any other way, I feel that my efforts have not been in vain. I thank you.

BEEKEEPING AS A SIDE LINE AND THE FUN OF THE THING.

HAMLIN B. MILLER, MARSHALLTOWN.

My subject today is of such a nature and my beekeeping experience of so short a duration, that I needs must confine myself to personal experiences, more or less, in order to make my remarks of sufficient length and interest. I don't presume in this effort to teach you old-time beekeepers anything. I am just going to be satisfied if I can only entertain you a little and perhaps take you back to your beekeeping youth.

Were you an audience of overworked office men, business men and professional men, I would not feel like I was about to make a fool, or a laughing stock of myself, before a wise, or otherwise, beekeeping audience. You will therefore listen between the lines and allow for discrepancies, by being generous enough to realize that I may "come out of it some day."

It tickles me every time I think of the funny things I have read in Dr. Miller's "Fifty Years Among the Bees." I am not related to Dr. Miller, the pioneer bee man, that I know of, but I have experienced some of his early and peculiar symptoms of bee troubles in my own bee work infancy. I often congratulate myself upon the fortunate escapes I several times have already made, and fully appreciate the many hints and experiences that others have given in the bee journals, that have helped me to avoid many pitfalls and needless humiliations that I otherwise would have fallen heir to, in spite of my already fast accumulating experience in bee culture, or "bee smartness." Right here I do not want to forget to mention that I owe the greater part of my bee knowledge to the bright, up-to-date and resourceful bee journals.

Just as soon as I discovered I was coming down with the "bee fever" and had become thoroughly infected with the disease, I consulted Brother E. C. Wheeler of my home town and (by the way, he is one of the honorable board of directors of this association) he at once diagnosed my case at first sight as a very serious attack and almost hopeless. He thought a go-slow-poultice of caution should be tied on tight and with the three colonies of bees I had already secured and no knowledge whatever about the pesky Italians, I certainly had been thoroughly stung with the "bee fever." He also recommended Gleanings in Bee Culture, as a good prescription for my ailment. I never knew mails to be so slow in all my life as they were after I had sent in my $1.50 for my first year's subscription. He gave me an old sample copy he had and I read every word in it, advertisements and all, including the chicken ads and Mr. Root's Home Department, before my subscription got started. I studied the markets like an old-time board of trade habitue. Mr. Wheeler also recommended that I get ABC & XYZ of Bee Culture.

Oh, I was going some. My wife couldn't get me to stop long enough to eat my meals. My physician had ordered me to go on a diet. I even overworked that. I fasted. I didn't eat at all, seemingly. Soon lost thirty-five pounds of flesh with my fasting and "bee fever." But then it did me good. Have regained part of my flesh, but have never been able to break the fever.

I saw by advertisements in Gleanings that there were other bee journals. I subscribed for the American Bee Journal and the Review—also joining the National Association at the same time. Didn't hear of any others, or probably would have kept on subscribing. I was simply reading everything I found that had the word bee in it, so you can readily see I soon became possessed of a book knowledge of bees as well as one of fool experiences. Let me thank the writers who have exposed their foolish notions and ideas, as well as wise experiences in the bee journals. They have helped me wonderfully and no doubt have also helped others. Keep up your good work. It assists the beginner and there are always beginners

Going back to my original thought, how would any of us ever attain to the eagle heights of beedom occupied by Mr. Root, Dr. Miller, Inspector Pellett, Dr. Bonney and a few others I might mention, if none of us initiates undertook making fun-sticks of ourselves for the amusement of the graduates in bee culture.

Now every man has, or at least should have, a hobby. That is what the general run of humanity recommends for the overworked and tired out business man. A hobby is supposed to be a sort of play or amusement, on the side, that takes up, or rather lets loose a cramped and tired nature into a relaxation, or what otherwise might be called recreation. Maybe you old beekeepers know what that means, or maybe you don't. I sometimes think a real beekeeper never gets tired, or rather, he should not ever get tired.

Some men I know of think a hobby is chasing a golf ball for hours over a forty-acre field. Others think it is to travel on foot twenty miles or more, over the roughest localities, carrying a heavy gun and ammunition just to get a chance to see a flock of ducks, too far away to even hear a gun.

On the other hand, did you ever stop to think that there are in this world a very few one-talent men? I doubt if there is a single one-talent man in this room today. Why you would not be real beekeepers if you were, for how many of you know nothing else but the bee work? Well, I just picked out the bunch of fellows that know a thing or two on the side, and joined them—I mean the fellows who like to fuss with the "buzzies" and have made bees the chief of my hobbies.

My physician having ordered me to stay out of the printing office, adding that I must rest from the nervous strain I was carrying, I immediately landed on my neglected lawn with a lawn mower, a rake and a spade. It was fun—never had really enjoyed it before, because I did not know I possessed another talent besides the acquired printing office habit. Then my wife also landed on me for flower beds and various other yard improvements. It just seemed as though she would like to sidetrack my hobby for hers, she was so industrious about it, but I was too far gone to lose out on the bees.

While all these new found pleasures were becoming settled upon me, a new neighbor, in the meantime, had moved in next to me and he had a couple of colonies of bees. I was just a little bit leary of the pesky things, for the sight of a bee had always affected me just the same as it does the majority of mankind—I was never unprepared to make my getaway.

It wasn't long before my neighbor was making an awful smudge and monkeying with those bees. By tip-toeing around and peeking over, I saw it all. Standing on somewhat higher ground, I was paralyzed with astonishment as I beheld him actually putting his hands down in that hive, *right among those bees.* The cold chills ran relay races up and down the full length of my nervous body, as I watched him lift out the frames covered with the yellow-banded fellows and dozens of them running over his hands. "Hello, George! What are you doing?" I asked, in as calm and possessed a manner as I could muster up. Without lifting his eyes he said: "I'm trying to see what these little fellows are doing."

His calm answer and the seemingly indifferent manner with which he turned those frames of comb and bees over and around, all the while critically examining them, captivated me and *I was stung with the bee fever.* Maybe you think it strange, but the fever has not yet abated.

Well, my confidence soon grew bolder and I was finally near enough to peek over into the hive. *Wonderful, delightful, entrancing.* I suppose you fellows know how it feels when you feel that way?

But, horrors! He asked me to hold a frame for him while he did something or other that needed attention. My nervous chills immediately changed to "shiveriness." My teeth would have chattered themselves loose had I not set my jaws solidly together, and would you believe it, when some of those varmints ventured to run over my hands, the water seemed to ooze off of me in a manner that would put a turkish bath to shame. After it was all over, I went home weak as a cat and laid down to ruminate, resuscitate and recover, for I had experienced a drenching equal to any turkish bath I have ever had administered to me.

I just couldn't rest. I wanted some bees; and because they did not sting me was one of the best reasons I should have them, and then again I had never before, in all my life, had enough honey to eat.

My neighbor was Mr. George Belt. I asked him to find me some bees. He did. We soon became fast friends, just because we had found true pleasure in the same hobby—bees. My wife soon called me "nutty." George and I were both fatally afflicted with the malady. Many an hour we ruminated on the possibilities and the pleasures we had discovered in the yellow-banded friends, growing more nutty every day. Ever after we have hailed each other as "George B." and "Hamlin B."

I soon secured three colonies, brought in from the country in home-made hives. Gee, but I was afraid of them just the same. Setting them on boxes in the back yard I carefully pulled off one of the cleats that kept them in the hives and ran away to a safe distance. They were so overjoyed at the fresh air I had let in that the whole yard seemed to be full of bees and their (I did not then understand) music, as they played in and out of the hive. As soon as their enthusiasm had waned, I stole up and liberated another hive. Now George B. did not see this, or he would have laughed, I know.

My wife also became interested (or rather a little "nutty") at this juncture and began handing out advice as to how I should conduct myself and manage the newly acquired back yard friends. Many have been the fool things we thought of, tried and experienced during the past three years.

This was in the fall of the year and I put those three hives in the cellar, and shut the cellar up tight from air as well as light. Every time I went down cellar, I hurried out again. My wife always made me go down for vegetables and canned fruit. I had to be bold, of course, but I was really afraid, just the same. The bees would come out and fly around. The floor was becoming thickly covered with them. I was awfully worried. I knew they would all be dead on the floor before spring. They got so noisy at times, and so bold, that I put off taking them out of doors until after the middle of the following April, and when I did grow bold enough to do so, I had another case of chills, for while carrying out the second and third hives the other bees took special delight in settling on me as the most likely object and place in the whole back yard to rest; and they actually turned my hat and clothes into a brown spring suit. It made me somewhat disgusted, but my wife wisely remarked that "you can't expect much else from bees." She knew so much about it, of course. Well, there were less than one million bees in those three hives after all had died in the cellar that wanted to die there.

This proved to be the beginning of the worst year in bee history. I always have had the knack of biting off my piece at the wrong time. Not a swarm issued from those three hives that whole summer. I know, because I watched them unceasingly. My wife said: "You just ain't got any sense left. You put those bees to bed every night and wake them up in the morning. You're getting to be a regular old fool." I said: "I don't care, it's grand to be foolish, and I am going to learn all about those bees."

We harvested, or rather stole, sixteen pounds of bulk honey from one of these colonies that fall, but had to feed two colonies all winter. The other colony fell dead on the hive bottom three days before I put the others out the following spring. Starved, of course. "Fool trick," my wife said. "I know it," was my response. I pined for thirty days. Never felt more uncomfortable in all my life, for I really thought they had enough to live on until it was time to put them out.

Things began to get better. I had six strong colonies in the fall, took out one hundred and fifty-nine sections of honey, ate honey all winter and sold the balance at twenty-five cents a section.

I wintered the six colonies perfectly, had a thermometer in the cellar and kept the cellar window open nearly all the time, but darkened the opening with a long heavy curtain, and discovered that everything else also kept better in the cellar with the temperature around 45 degrees.

During the past summer I increased to eleven colonies. Lost two of my queens and then consolidated three stands into one leaving me—I'll tell you how it was. The colony that had, up to the time, made me 108 sections of fine honey, did not swarm until the last day of June. I was lounging in the yard swing, watching a half a bushel or so of the tenants hanging on the front of the hive, when all at once they came out of that hive like a cloud, rose in the air and left like a roaring tornado. I was mad. I never before had had nerve enough to clip a queen. My wife was excited also. More advice was given me as to how I could have prevented such a blunder. I got out my tools, jerked the supers off from that hive and found the queen—I think now she was a virgin—slipped the scissors under her wing and clipped her. Also clipped the queen of another colony that had just swarmed. After it was all finished I repented what I had done, as my book knowledge had then had time enough to soak through and leak out and I realized what I probably had done. The next day I found one of those clipped queens balled on the front steps of the next door hive. I sprinkled water on the ball, she emerged and ran into that hive before I had time to stop her. Something happened to that colony as it became queenless. So did the other hive where I had clipped the queen. I don't know about the colony with the runaway swarm. They kept on working. But I do not know yet whether it still has a queen or not. Presume I will find out next spring. Another fool notion I suppose. Presume my wife will tell me about it at that time. Maybe some of you can tell me about it now.

Now while clipping these queens, my wife as usual got busy helping(?). I set a cover loaded with bees, against the fence behind the hives. She took a seat on a pile of bricks nearby, close by the cover, with her dress comfortably spread out. Bees, I have discovered (and so has my wife) always travel up and not down. It was not very long until I heard a cry of surprise: "I'm stung." Well, she was, too. Infection set in and after the physician had discontinued his attentions, *I* was stung—for $6.50. The super of honey I took off at that time sold for $6.00. The doctor overshot the mark just fifty cents, but he succeeded in getting it all for that time. But in spite of her many experiences, she still persists in running out every time I monkey with those bees and makes me as much bother to keep her off the job as any "fool bee" that ever endeavored to attract all my attention.

However, I harvested 247 nice sections of honey this year. Much of it No. 1 fancy and all selling at 25 cents per cake. I weighed ten sections that I sold to one party for $2.50 and the scales showed ten pounds and four ounces—25 cents per pound, you see, and the customer wanting more.

I also have another assistant in my back yard apiary that must not be overlooked. My neighbor's boy. He was less than two years old at the time, but nevertheless took the contagion from me. Whatever he saw me do was, in his mind, worthy of emulation. While mowing the lawn one day, I heard screams of terror and pain coming from the bee yard. Running as fast as I could, I discovered my little helper covered with bees and the balance of them trying to find a place to get at him. In his hand he held a flat paddle with which he had occasionally seen me swatting pestiferous bees. He had just been poking and striking the bees as he stood in front of the hive, just like he thought Ham did it. Giving his little dress a jerk, most of the bees fell to the ground and I carried him out, expecting to see him soon assuming the aspect of his toy balloon that had been given to him at the circus. Again jerking his dress and brushing off the remaining bees, I found he only had seven stingers fast on his face and hands and after free applications of ammonia and carbolic acid he soon quieted down and to my extreme satisfaction he did not puff up like his toy balloon. He is now a full-fledged helper and never misses a chance to look into the hives every time he sees me opening one, or taking off honey. He always wants to taste. Well, so do I. It never tastes better to me at any other time, so we eat together.

If there ever was a hobby to get a man's mind off of everything else he ever got his brain busy with, *the bee is it.* They say fish and cabbage are foods for the brain. Well, I do believe the bees are the emergency brakes in cases of overwork and brain fag. I have wasted thirty-five years of pleasure and fun, as well as profit and better health, by not having discovered the interesting and industrious bee as my friend.

I really believe there would be less subjects in the insane hospitals had these same people been a little "nutty" about bees. Was there anybody ever sent to the insane asylum because bees had made them crazy? I never heard of any such. Have you? I also believe there would be fewer broken down business and professional men if they had taken time to become interested in a few colonies of bees. I also believe the outdoor treatment of bee culture, taken early in life by the average individual would eliminate many cases of the white plague, commonly called tuberculosis, not to mention many other ailments that the outdoor life would benefit.

Are there any weazened-faced beekeepers here today, because of having associated with one of God's greatest blessings to outdoor-loving mankind? You all look to me like you would take care of a square meal of victuals every time the meal hour came around.

God made the bees for us. He has heralded the praises of honey in the book of Holy Writ. Man makes sugar and molasses by chemical processes. The bees make honey by the process invented by God Himself, who never patented the process and never has changed or invented any better way than he started the bee out with from the beginning, notwithstanding all the theories that Dr. Bonney and the many other wise and learned fellows are continually contending about in their endeavors to make over the bee and his habits.

Do you know I have learned to appreciate and love, more and more, God's outdoor of life since I got this bee trouble? I never had seen the sun rise since I was a little boy on the farm until the bees gave me the morning boost. I have got so I cannot successfully night-hawk it any more, and neither can I lie in bed in the morning while the bees are out and at it. But I have never been able to get out soon enough, that I have not seen them coming home as well as going out. So you see, for me, it has been grand to be "nutty."

My health is better, I feel better and really am better, because I have learned to love the bees.

MAKING INCREASE.

J. W. BITTENBENDER, KNOXVILLE, IOWA.

There are two ways of increasing, by natural swarming and by artificial swarming or dividing. The artificial swarming is entirely in the hands of the apiarist. If he uses good judgment in making his increase, they should be as good in every respect as natural swarms. Now my way may not be the best method for all localities, but for my locality it is essential to lay the foundation and pave the way for a larger honey crop. Every beekeeper should be well informed in regard to the time of the opening of honey flow and prepare his bees accordingly. Many a good honey flow has passed by for the lack of having the bees in proper condition to harvest it. In my locality the first honey flow begins to open with the first few warm days in spring. With the opening of soft maple, willow and elm, followed up with dandelion, and closes with fruit bloom about May 10th. Honey gathered from any of these blooms is not very desirable for market or home consumption, but is excellent for building up colonies and making new swarms and to prepare for the main honey flow that usually opens about June 5th. By the close of the first honey flow, about May 10th, if the weather has been favorable I have my bees very populous and working in supers and beginning to cast natural swarms.

There is nothing much in bloom now for four weeks until the white clover opens about June 5th. If colonies have prepared to swarm and have queen cells they will destroy them and many will get in starving condition and often destroy much of their brood. At the opening of the white clover they are in very poor condition to harvest honey and store surplus. Now right here the apiarist must step in and help run the thing. At about the close of the honey flow I examine, and all that have made preparation for swarming begin feeding before the check in the honey flow affects the bees. The others prepare to divide, and there is no other time in the season that it is more profitable to make your increase, and bees are in natural condition to swarm at this time. But I do not wish to be understood that all colonies in an apiary will be in swarming condition. All colonies that have brood in seven and eight frames and are hanging out or working in super are only fit to divide. There are many advantages in increasing at this time. You get your idle bees employed; to rear young bees you get your queens to lay out by the time white clover opens, and the swarming fever is kept down. The eggs that are laid during these four weeks will mature the bees that will gather the white clover crop. By feeding I stimulate the queen to lay at her highest capacity, and I get young bees of the proper age to gather the honey harvest.

I make my increase just at the close of the first honey flow. All the colonies that have not cast natural swarms I divide by taking two combs of brood with the adhering bees and the old queen and place them on the old stand and move the old colony away to a new place and give them a caged young laying queen. I move the combs together and leave the space on each side vacant. The new hive I give four empty brood combs, this having six combs also. Now I proceed until I have made as much increase as I want. In twenty-four hours I make a close examination. If more bees have left the old colony so that the brood cannot be cared for I take some more combs out and give it to the new colony. Now for three days these divisions need good attention and by this time they become well established. After the third day I fill in the two combs at the side with full sheet of foundation. I now place on my feeder and feed half pound of honey every day in the evening. I use a feeder especially made for this purpose.

At the beginning of the white clover harvest I have my colones in prime condition with young healthy bees. The queens have about finished their spring season of laying and the swarming fever is about over and the bees have settled down to business. I use the eight-frame hives and a loose hanging frame. Now I want to draw your attention to these two outside frames of foundation. When the bees have built in these combs and filled them with honey and are about ready to cap is the proper time to put on your supers. The wax secreting bees will enter the super more readily now than any other time.

INSTRUCTIONS FOR SWEET CLOVER GROWING.

FRANK COVERDALE, DELMAR.

Sow sweet clover on ground well prepared, on a good mellow seed bed. A sod field that has been plowed the previous fall is best of all. Spring plowed sod is all right, and will answer nearly as well, but work into a good seed-bed; and where the rainfall is sufficient, harrow the seed in shallow. But in arid sections a drill is best, putting the seed sufficiently deep to insure enough moisture to make sure of a good come-up. Sweet clover sown on such ground will grow a heavy crop of nodules on its roots; and by the end of second season this ground will be thoroughly inoculated, and can be depended upon for all time to come for routine methods, as these bacteria will live in the soil for several years. A good stand of alba is usually sure when sown on land that would grow 60 bushels of corn per acre, and a nurse crop sown with it of barley, wheat, or early oats seeded somewhat thinner than usual; and after the ground is inoculated from growing previous fields, a fair cutting of excellent hay can be mown in October after the grain has been harvested, making a crop of small grain and a cutting of hay the same season.

After the fields are inoculated by the actual growing of the sweet clover on given fields, this method will be best of all. For pasture for cattle, seed with timothy or any of the native grasses for best results, as the clover causes the timothy to do much better, and is richer in carbohydrates, and the sweet clover is much richer in protein; and if the season should be so dry that the clover might be lost, other grasses might appear. No other pasture is quite as good and safe for cattle to graze upon.

For hog pasture, seed with oats on good ground. At first old hog lots are ideal to plow and sow as above. Turn in the hogs as soon as the oats will afford a bite, and let them have the field all summer till all is frozen down. This pasture will be found to be superior to the swath seeding generally recommended by our leading agricultural papers. Have enough size in field so the hogs won't have to eat it too short. Those sweet clover fields will furnish immense feed for two seasons; and if the alba threatens to grow too tall, and to become woody, mow the field only the second season from sowing. This will keep the clover succulent and fresh. Mow with the guards turned very high, to prevent killing any of the plants. Enough of it should be left to grow seed to reseed thoroughly the pasture. Keep the hogs well rung or they will dig up and eat the roots toward fall of each year, or in throwouts in winter.

HANDLING FOR HAY.

After sweet clover has been growing on land for two years, a field can be seeded alone on clean ground not too foul with weeds, and almost 1½ tons of extra hay per acre may be cut in October; and it should in no case be mown for hay until the crown sprouts have begun to show up on the top of the roots about one inch under ground. Then the field can be mown just as close to the ground as one wishes, without any harm, and we have never known such a field to winter kill. This will be the same kind of hay that is cut after the grain crop in October, and will be mown at the same time.

The second year's hay crop must be handled differently, and will be ready to mow early in June, just as soon as it attains the height of 22 inches; and the field must be mown sufficiently high to leave some branches and leaves on each plant; so when the mower is started let the operator, after starting, look well at the stubble and see that some leaves and stubs of branches are left on each plant. If this is not the case much of the alba is liable to be killed; so the above precaution must be adhered to. The hay should be left lying in the field until nearly dry, but not dry enough to shatter off the leaves. It may then be raked into winrows, and made into small cocks before the leaves will shatter from being too dry; and while it is still in a tough state, fit to be hauled to the mow, care must be taken not to let it get too dry, as the leaves would then be largely lost, which are as rich in feeding value as wheat bran. Then, again, if put into the mow too soggy, it will mould in the center of the stack or mow.

We find that, with a little experience, we are getting much better hay than we ever had since we began to make sweet clover hay. This second year's crop will make three cuttings here; but it must be got at on time. The first cutting will not be in bloom yet; but the second and third cuttings will be continually in bloom soon after the second growth comes on, and the second cutting should be made when 22 inches tall on an average, and must be mown high, as at the first cutting. But the third mowing can be done close to the ground, as its time of usefulness will be at an end then. The second cutting may be taken for seed, which makes the best crop of seed; but in this case only one cutting of hay can be made and a crop of seed. If seed is harvested, the field will be well reseeded for the coming season.

GATHERING THE SEED.

It is always best to take a cutting of hay first. By doing this a much better crop of seed of better quality will be the result; and the seed crop will handle with one-half as much labor, as the straw will be shorter and much finer. A self-binder is the right thing to harvest this seed crop, binding it up like oat bundles just as soon as the seed shows to be three-fourths black, and the rest a yellow brown. If harvested at this time a heavy seed crop will be secured. Set those bundles in shocks, two and two, just as long rows as you wish, until dry; then, as either stock or hull seed left in the hull often heats badly, we recommend hulling the seed when thoroughly dry.

CONCLUSIONS.

Sweet clover will thrive best on soils that contain most lime; and a good liberal amount of lime applied to most worn soils will be found to cause the alba to make greater growth; but it is not necessary for the successful growing of this legume if the foregoing plans are adhered to. Twenty pounds of hulled seed is about the right amount of seed to sow per acre. We used a side delivery the past season, delivering the hay into the rows when not quite dry. Then we let it dry a little more in those delivered rows, then used a hay loader when all was about dry; but the moisture from the ground and the hay, still a trifle green, all made up very nicely. Only a few leaves were lost. I believe this will usually work well, and it saves much labor over the cockup plan.

In handling the seed bundles it will be found profitable to spread a canvas over the wagon rack to catch the shattering seed.

The growing of sweet clover is the best possible way to prepare ground for the successful growing of alfalfa.

Sweet clover will not live long unless the bacteria nodules begin to form on the roots; and these nodules will be very slow to show up unless good rich ground is used to begin with, or the land is limed, or a good covering of manure, or both, are used; and when all the above precautions are taken into consideration, and any of them applied, very few indeed will fail to make sweet clover a paying proposition on the farm, and he who is in the corn belt, and sets himself to the successful growing of this legume, will soon find himself growing much larger yields of not only hay and pasture, but a large increased yield on each acre of corn.

TO INOCULATE SEED—A PLAN THAT WORKS WELL.

Dig up strong sweet clover roots on ground where this legume has been growing for years, carry to a place where the sun never shines, shell off the dirt with the nodules, and let dry and pulverize into a fine dust.

This dust is teeming with the fresh bacteria, and is at this time ready to use for the purpose of inoculating either sweet clover seed or alfalfa seed.

Prepare water with sufficient granulated glue stirred in to make a thin sticky syrup. It will be necessary to heat the water some so the glue will dissolve. When cool it is ready for use. Empty the seed on a floor in the shade, then pour over the seed sufficient of this syrup, and shovel it over and over until glue is all on the seed, when it will be ready for the dust. Sprinkle sufficient of this dust to dry the seed, so that the seed will no longer stick together. When done every seed will be coated with this dust that contains the bacteria, and is exactly in the right place to cause the young plants to grow nodules at once.

When the above work is done the seed is ready to be sown either with nurse crop or alone. Be sure that when sown the seed is covered at once, as sunlight will kill the bacteria, and the thing that makes for success is to keep these operations always in the shade or on a damp cloudy day.

If this method is used, sweet clover will thrive on very poor land, and build it up very fast. In any case where this legume has not grown successfully, the seed should be treated as above. The application of ground limestone applied to the land at the rate of one and one-half to two tons per acre causes the alba to grow an abundance of nodules, and in this case no inoculation is needed.

EXHIBITS.

R. H. LONGWORTH, POLK CITY.

To the Iowa Beekeepers' Association in Second Annual Convention Assembled. Greeting: When your secretary requested me to present the subject of "Exhibits" I had no idea of the array of talent that would here be mobilized. And since I have read the printed program it has been hard for me to get away from the impression that in appearing before you at this hour, the chief exhibit I would be presenting would be that of nerve.

Surely at the close of a series of sessions so replete with interest and enthusiasm, something of the nature of nerve is required of him who would introduce the comparatively uninteresting topic up for our present consideration. I say comparatively uninteresting advisedly. With 40,000 beekeepers in the state you can count on your fingers without using your thumbs the exhibitors at the State Fair for the past ten years.

That the beekeeping industries exhibits are not without interest for great numbers of fair visitors is clearly evident to one who has spent a day among the throngs of sightseers passing through the apiarist's section of Agricultural Hall.

When we speak of exhibits, naturally we think of fairs, and when we talk of fairs we are discussing educational institutions. If our fair should happen to be falling short of fulfilling the requirements of our ideal as an educator, it is our privilege and duty to give to it our best thought and effort.

As your ideal for your fair is high, let your ideal for your own exhibit be none the less so. Be satisfied only when you have given it your highest thought and your most conscientious endeavor, your closest application and your keenest effort. Then wherever awards may fall, the true reward will be yours.

We do not believe that we will be breaking faith with the preceding proposition if we plan for the appropriation by our own families of a large proportion of the educative influence set in motion by our exhibit. If you have no family are you a young man? I would say quit it.

Are you an old man? Interest some young persons with you. Someone has said that to educate a child properly you should begin with the grandmother, and so it might be said with regard to training an exhibitor, but we are talking of exhibits and not of exhibitors. However, take this from me: your exhibit will be better if your family is enlisted in the campaign to make it so, and your family will be bettered if your exhibit is used as means for their moral and intellectual as well as material advancement. As a wave goes out from the center where it is born and joins hands with the wave running to meet it, and these two with others, so the interest of those connected with you are carried out through the influence of your exhibit, and acquiring added and increased interest there ensues a blending with a broader and more significant life.

To return to the suggestion. Your exhibit will be better with the help of your family. Your exhibit should be as extensive as practicable for you to make it, and you will need help. Your exhibit should be as attractive as it can be made, and again, and more so, you need help.

There is no discredit given, but rather an honor shown, the goods we exhibit through the employment of the decorator's art, and here you need the help of wife and daughter. After being fully established your exhibit will need careful attention, and the admiring and the curious, the prospective customer and the man with a hobby, the amateur seeking to imbibe bee lore, and the past grand master in agriculture are all to be met and satisfied—remember that last word, satisfied.

If you will pardon this reference to our own exhibit at our last State Fair. There are six of us in family, the father and two sons, the mother and two daughters. We employed two helpers and later on for part time two more, all young persons, none too many. I do not feel that I should exact from you at this hour time to go through all the details connected with making your exhibit attractive and withal effective. Not only should your exhibit be as extensive as practicable, and as attractive as possible, but it should be as persistent as the inevitable "others may come and others may go" but you should go on, if not forever at least to success.

Our friend Mr. Bittenbender, of Knoxville, is a splendid illustration of this persistency. For twenty-seven consecutive years he has been regularly at the State Fair. I well remember the illuminated countenance of our good brother as he told me, a number of years ago, of reaching the $100 mark in premium winnings, a goal he had been striving toward for years.

Mr. James Heathershaw, just outside the city, owner of what is probably the finest market garden farm in this part of the state, has exhibited at the State Fair without one failure for thirty-five years, and his winnings this year at the age of 76 amounted to over $200.

The late Mr. Clute, of Manchester, an exhibitor in vegetable and apiary departments died an exhibitor, his last State Fair rounding out forty years.

If I may have seemed in the outset to deplore the necessity for appearing at the close of so great a program with this rather drouthy paper, I appreciate the fact that if the paper rightfully has a place before you, this is the logical time, for more intimately than we may think is this question of exhibits connected with those preceding it. Look down the number that have been discussed. Is Mr. True planning to arrange his apiary in the most effective manner? Let him make a home exhibit of it. Does Mr. Secor want to increase the consumption of honey? Let him exhibit. Is Mr. Pinney in doubt as to whether he should run for comb or extracted? He, too, should exhibit. Does Mr. Strong wish to sell direct to the consumer? Let him exhibit. Does Mr. Aldrich desire to lend to his beekeeping the dignity of a business? He should exhibit. Has Mr. Southworth problems connected with marketing his crops? Advise him to exhibit. Does Mr. Bonney question the value of advertising? We prescribe for him an exhibit. Is Mr. Miller looking for another side line of the fun-developing sort? Tell him for me to hitch onto an exhibit. Has Mr. Hall rounded out a great work for the season? Perhaps all that is lacking to bring out in striking clearness the outlines for the picture of that work is an exhibit.

Mr. Bittenbender already stands committed as an exhibitor. He can't help it. Maybe he was born that way. But away back there in the early days of the Iowa State Fair he came up against the proposition that if he would exhibit he must produce and then he began to get busy. Then along came the germ whispering in his ear: "Exhibit more extensively, Mr. Bittenbender," and our genial friend yielded to wooing, and there you have his well worked out scheme of increase.

Let me say here, Mr. True has made two very interesting and promising exhibits, winning a goodly number of blue ribbons. You quote sometimes these words: "Sow a thought and reap a habit; sow a habit and reap a character." Will you allow me an application of the quotation: "Sow a thought now—get it started to growing while conditions are so favorable concerning your exhibit. Get the exhibit habit and be an exhibitor."

HOW MAY WE INCREASE THE CONSUMPTION OF HONEY?

BY EUGENE SECOR, FOREST CITY, IOWA.

What do you suppose is the average amount of honey per inhabitant consumed in this country? I have not at hand the figures of the production of honey in the United States as shown by the last federal census, but from what I know of my own locality by actual sales, and of other places by observation, I am convinced that the amount of honey used isn't one pound per capita per annum. Just think of that! There are more pounds of tobacco sold and used ten to one than there are of the nectar of heaven! The consumption of sugar as an article of food is out of all proportion to honey used for the same purpose. It is quite a common thing for families to buy fifty or a hundred pounds of granulated sugar at a time, but I seldom hear of the head of a family carrying home anything like the same quantity of honey. Perhaps that is why we are a nation of dyspeptics. It is an *effort* for the stomach to digest sugar. Honey is more assimilable. It requires less vital force for the stomach to convert it into blood and bone and muscle and fat.

But someone will say honey is a luxury, and he can't afford luxuries. Honey *is* a luxury. It is unmatchable by the arts of man. No alchemist can make it. It is the very soul of the flowers and they are the poetry of nature. Science cannot compound it nor perfume it with the essence of heaven. It is distilled by the sunshine in the secret chambers of the corolla and is poured into delicate new-made chalices of wondrous workmanship by the servant of man for his inexpressible delight. Yes, honey is a luxury. But isn't sugar a luxury? Don't you think you would live just as long and perhaps a little longer if you didn't eat so much sugar? Sucrose sugars are responsible for many kidney troubles. Did you ever know of a case of diabetes in a constant user of honey?

Someone else says honey is too expensive. He can't afford it. Yes, honey is higher than sugar, but not so high as meat. Meat isn't a necessity. We think it is but it's a mistake. Don't you think we'd live just as long and perhaps a little longer, don't you think we'd be just as strong and perhaps a little stronger if we didn't eat so much meat? How many millions of people there are in this old world who scarcely ever taste it—people just as strong and just as healthy as we who kill and devour helpless creatures just to satisfy a perverted appetite! Statistics gathered by the Department of Agriculture for 1911 show that the people of the United States consumed *one hundred and seventy-two pounds of meat per capita* and I said they didn't average *one* pound of honey!

But I don't need to lecture you beekeepers on the benefits of using honey, unless it is to urge its use a little more freely in your own households. And don't forget to extol its virtues to the heathen round about who use meat so excessively.

I have known men who kept a few colonies of bees to take the very first filled supers to town to sell instead of leaving them in the kitchen and telling the women folks to help themselves. This class of beekeepers does more to make honey unpopular than many suppose. They are generally farmers who have little experience and who don't seem to realize that honey is a luxury and therefore must be put up in attractive style. Perhaps they take it to their local market in the super just as it came off the hive, propolized and travel-stained, and by the time the grocer gets the sections out it is a mess. He is disgusted with it and wishes the stuff in Ballyhack. It is anything but tempting to a customer who might be in a humor to buy if it looked nice.

Getting back to my subject, I will say that one way to increase the use of honey is to use more of it on the table in the home where it is produced.

When company comes what luxury is more dainty and inviting than a section of the finest honey you have in the house? Call the attention of the guest to it. Nine-tenths of all the visitors *we* have eat honey. They like it. Perhaps when they go home and plan to entertain company themselves they will think of the delicious honey they ate at The Shelter and buy some. I will here state that our table is seldom set without honey, *and we eat it*. We never get tired of it. A pound section disappears in company with a pound of butter—both going the same route to the gastronomic laboratory along with pancakes, bread, biscuits or muffins as the case may be. The good Book says, "Butter and honey shall he eat when he knoweth to refuse the evil and choose the good."

By the way, isn't it a wonderful laboratory that we carry around with us, the stomach? While we're working or walking, studying or writing, loafing or sleeping, the heterogeneous conglomeration of materials we have dumped into it are assorted in this laboratory and assigned, each particle to its proper work and function in the building of a man.

The way to increase the use of honey is to popularize it. Advertise by any method you choose but be sure to advertise by selling only the best. If we produce comb honey every section ought to be so clean and attractive that it will tempt someone to buy. I never put on the market an unfinished section, and every section is as thoroughly scraped for the local trade as though it were going to the great city. If we would take more pains to cultivate the home market by selling only a prime article and keeping it before the people we would sell more honey at home and make more money out of it. Remember that honey is a luxury, and it must be put on the market in such attractive shape that it will be admired and bought. In other words it will sell itself. If honey on the grocer's counter is mussy or in uncleaned sections few people will be tempted to buy it. The eye is the key that unlocks the purse. People advertise to catch the eye. We must advertise *our* goods by keeping in sight the finest quality and handsomest product that skill can produce. It is a good plan to have a bulletin board near the highway on which is displayed in large letters *Honey for Sale.* It will bring many a customer.

I suggest that the local price be not held at such a high figure that the people will not take hold of it. An example to the point: In my own town most of the resident beekeepers got together early in the fall and agreed to hold comb honey at twenty cents. The consequence was it didn't move, but a little later at fifteen cents it sold fast. Fancy comb was selling at the time in Chicago at sixteen cents. Now, it wasn't just the wise thing to do to hold at twenty when, if shipped it wouldn't have netted the producer more than twelve to fourteen. Better put the home price at a figure that will sell as much as possible of it and save freight and commission.

Another way to advertise honey is to show it at fairs. I believe every exhibitor of honey will say that an attractive display of honey is always admired and commented upon. It whets the appetite. Live bees are shown just to tempt visitors to stop and ask questions. If bees didn't make honey they'd be no more attraction than a nest of ants. But the attention once arrested the opportunity opens to talk of the wonderful work done by the bees; of the different kinds of honey and why different; that bees do not mix honey from different flowers; that white clover is distinct from linden, sweet clover from buckwheat and alfalfa from goldenrod; that comb honey is never capped till it is ripe; and when fully ripened and sealed it is a product which man with all his inventive genius cannot copy or excel; that there are many uses to which honey may be put beside eating it in its natural state; that cakes of various kinds and cookies and doughnuts and preserves and vinegar may all be made, honey taking the place of other sweets. If it is known that honey is a more healthful sweet than cane or beet sugar and that a delicate stomach is by its use saved from some of the arduous labors of digestion perhaps the listener will be reminded to buy honey instead of some of the canned stuff now so plentiful. It ought to be known that honey on the table takes the place of sauce and preserves—at least it does at our home. If honey is always on the table the housekeeper doesn't need to fret and sweat over the stew kettle nearly so much.

My remarks thus far are mostly concerning comb honey. The producers of extracted honey are generally those who keep a large number of colonies and who understand how to handle and how to market it, but if any one thinks of trying this branch of the business I want to caution him against extracting and selling unripe honey. Nothing will sooner demoralize trade and disgust would-be users of our product than to buy a can or jar of so-called honey when it is little better than nectar-sweetened water. Wait till the combs are well sealed before extracting. For the retail trade extracted honey ought to be as pure as comb honey and put up in an attractive package, with a label on the can or pail just as handsome as other canned goods. Explain why honey granulates and tell how to liquefy it without spoiling the flavor. Such an article will "taste like more"—blessing him that buys and him that sells.

A good deal of honey could be sold to farmers if one is adapted to the business of peddling. In my part of the State not one farmer in twenty keeps bees, but it is a dairy county and every farmer has money. If they were solicited in the right way I am convinced they would buy a lot of honey and by so much increase the consumption, for they seldom buy it at the grocery. When they go into a store to do the week's buying they see so many other things on the shelves, and their list from home is so large, they pass by the luxuries. Take honey to them when nothing else is in sight and they will buy. People need to be solicited. They expect it. How many farmers would carry insurance if they were not solicited? How many would buy automobiles if they were not persuaded by the agents? How many would plant orchards if the smooth-tongued tree agent didn't call? One can sell honey in the same way, and in large quantities.

REPORT OF SECRETARY.

S. W. SNYDER, CENTER POINT.

The report of this office will not of necessity be very lengthy. There might have been much more accomplished through this office if the secretary had no bees to look after and a few other irons in the fire.

The first duty performed after returning home was to make up enough typewritten copies of the proceedings of our first convention to fill the demand of those applying for them.

It was soon discovered that if we obtained any favors through our legislature we must get busy at once, accordingly a letter was mailed to each member requesting them to get after their representative and senator and urge them to support the foul brood bill which was then on file. Through the Secretary of State we obtained a list of all representatives and senators and a strong letter was mailed to each one, urging their support of the pending bill, and after much anxiety and several reverse reports we finally landed on top with enough state funds backing us to begin a much needed work.

At the suggestion and offer of the Secretary of the National Association to furnish the Iowa bee keepers one or more carloads of cans, through this office I accordingly notified our members to send in estimates of their needs. A good many responded, some in a great hurry for the cans and others in no hurry which made it apparent that it was going to be hard to pull them all together soon enough to serve all satisfactorily but I thought I had everything all arranged to make it go when either the loss of a letter from the secretary or the omission to send it caused a delay, during which time a number of those in the greatest need of cans ordered theirs individually, thus cutting down our estimates too low for a carload. The above mentioned delay occurred about the time the business affairs of the National Association was transferred from Detroit to Northstar. Finally enough later estimates came in to make it apparent that we would yet get up a carload, but it was getting late and we must act at once, so price lists were sent to all those wanting cans with a request to send in their orders at once; accordingly the orders and checks came rolling in and among the first orders received it was apparent that there had been a misunderstanding of the price list. I immediately wrote for the can company to give us a further explanation of some items in their price list which resulted in a revised price list, making it necessary to write some members having already ordered to send us more money. I thought it too late to go over the ground again so returned the orders which had been received and let each one order cans for themselves. Co-operative buying of supplies can undoubtedly be made profitable to the members of our Association if we can get together early enough in the season to serve all satisfactorily.

Several years ago when N. E. France was general manager of the National Association, he sent out to members some printed matter covering some supreme court decisions relative to the rights of bee keepers. I have carefully preserved the copies sent me and last spring I had an opportunity to use them in a most gratifying way. Under pressure of several agitators, the city council of Center Point was about to adopt a resolution declaring bees a nuisance and to pass an ordinance requiring their removal without the city limits. The measure had about reached the point of final action before I heard of it. I chanced to hear one of the promoters of the scheme speak of it; I promptly took the matter up and informed him that they could do nothing of the kind.

The bees in question were the property of Geo. H. Frey, a member of our Association. He keeps about 240 colonies within the corporate limits of Center Point. I requested Mr. Frey to keep me informed as to the progress of the ordinance and notify me of the time of the meeting for final action. When the time arrived I appeared before the council armed with the supreme court decisions and pointed out where similar ordinances had been set aside, showed them the strength of our Association and what they might expect us to do in case they passed such an ordinance. The mayor and council kindly received the information, read over the supreme court decisions and other legal precedents realtive to bee-keeping, after which the mayor remarked: "Gentlemen of the council, you see what we are up against, we have no money to spend on a matter of this kind. A motion to lay this proposed ordinance on the table will be in order." The motion was forthcoming and received the unanimous support of the council. This settled the ordinance question but did not entirely settle a couple of the most rabid agitators. Finding themselves beaten in the ordinance matter they constructed some traps and hoped thereby to destroy Mr. Frey's bees. I made some roundabout investigations and dropped a few strong remarks where I thought the parties aimed at would get to hear it, stating that they might just as well go into my pasture and deliberately kill one of my horses as to trap and kill Mr. Frey's bees and for the commitment of either they might find themselves behind the bars in state prison. I do not know if it was due to our investigations and insinuations, or if they were unsuccessful in trapping the bees, at any rate the traps disappeared and Mr. Frey is keeping bees in Center Point undisturbed.

In the establishment of the aforementioned precedents and legal rights of bee keepers, we as an Association owe a debt of everlasting gratitude to former general manager N. E. France for his untiring and vigorous efforts on our behalf.

An effort was made through this office to induce the county and district fairs of our state to give the products of the apiary a more prominent and extended premium list than has been customary by sending the secretary of each association in the state a letter outlining a suitable premium list. A few replied, stating that the matter would be duly considered by their board of directors.

Our last effort now under way is to increase the membership of our Association. Our president prepared copy for a printed card to be inclosed with the correspondence of business firms dealing with bee keepers, soliciting them to join the Association.

Through a kind and generous offer of the editor of The American Bee Journal the badges for this convention were supplied in exchange for our list of members and their addresses.

COMB OR EXTRACTED HONEY.

C. L. PINNEY, LE MARS.

As we proceed with the consideration of this subject I want you to bear in mind that I am talking to a convention of Iowa beekeepers; and we must consider our conditions as they exist in Iowa.

Our main honey flow, from which we procure the most of our commercial honey, is white clover.

Of course, there are some favored locations where we get some basswood or linden, and there are other places in the eastern part of the state where we get minor flows from other sources.

In my own locality, excepting a slight flow from heartsease in August, about one year in three, our only marketable honey is produced from white clover.

It covers this great state during the months of June and July.

It thrives in every county, and I doubt if there is a section of land in the state which would not support profitably at least a dozen colonies of bees.

And why not; a soil that will produce a banner crop of corn will produce white clover, and climate that will mature corn will cause clover to produce nectar and give it that thick heavy body and that delicious aroma and flavor found only in Iowa.

White clover honey; the finest honey in the world.

Start from the Missouri river on over west and travel east to the Atlantic Ocean, over the white clover belt, and the farther east you go the lower the average temperature, especially nights.

And let me say to you the higher the temperature and dryer the climate the thicker will be the nectar as it is gathered from the flowers, and the less the bees will be obliged to reduce it.

For this reason the more flavor it will have, and the thicker or riper the honey the longer it will retain that flavor.

In proof of this go out in your apiary any still evening when your bees are gathering honey and if you are an experienced beekeeper you can tell from what source they are gathering honey, from the aroma that pervades the atmosphere.

Our late Bro. Alexander of New York state artificially ripened his buckwheat honey, and during the process of ripening he reduced that strong metallic buckwheat flavor, making it more palatable to the average consumer, but with our white clover honey we should strive to retain as much of that delicate clover flavor as possible.

For this reason I seal my extract honey in jars as fast as I extract, or after it has stood in the settling tank from 12 to 24 hours, and I never allow my comb honey to be exposed to the atmosphere for any length of time.

I want to say to you, that I consider it the duty of the Iowa Beekeepers Association to establish a brand or trade mark and have the same registered for our Iowa white clover honey.

If each producer or member of this organization will use this trade mark on the labels of all of this class of honey he sells, it will in a short time materially increase the price of our honey.

I don't know as it would increase our sales to any great extent for it is an easy matter to dispose of a crop of this kind of honey now.

I never produced a crop of clover honey so large that I was not able to sell it at a fairly satisfactory price, except one year in the 35 years I have kept bees in this state.

That year, 1910, while the price was as high as other years, I carried over to 1911 about 50 cases of comb honey, which I sold to my customers during the fall of 1911, for 15 cents per case more than the same grade sold for the year before, being a fair interest on the money and another demonstration of the quality of our Iowa white clover honey.

In the western part of the state we have some years a flow of honey in August from heartsease.

This honey, while the color is good, has a strong, and, to me, rather disagreeable flavor.

For this reason I turn my comb supers crossways so the air can circulate through them, and my extract honey I allow to stand in the settling tank for at least 30 days.

In the meantime I send to Wisconsin and buy a few cases of basswood honey and blend it with this heartsease, making a fairly good article.

Now there is one more honey flow I want to call your attention to, and that is from dandelion, during the month of May.

The first blossoms appear about the 25th of April, or at the same time as the first early fruit blossoms, and it continues to bloom if the weather is favorable until the 1st of June.

It has been steadily increasing for the last 20 years, until last spring it covered the ground with a mantle of gold as far as the eye could reach.

This honey commercially is of little value, but as a stimulant to build up our bees, and put them in prime condition for the white clover in June, is of the greatest value.

I was reading in one of our magazines not long ago where some writer seemed to doubt as to the dandelion producing very much nectar.

Let me read you from the record of my scale hive for one week, commencing May 22, 1913.

This was a 10 frame hive, with a 5 inch extraction super on top, containing a strong colony of Italian bees.

Fruit bloom was over. The clover blossoms were just beginning to appear. Nothing on which the bees could work except dandelions.

22d. Shower in the morning, clear in the afternoon, gathered 7 pounds.

23d. Cloudy in the morning, clear after 10, gathered 8 pounds.

24th. Clear day, gathered 13½ pounds.

25th. Clear, cast an 8 pound swarm.

This was the largest swarm I ever had this early in the season.

It was hived and placed on a new stand, for the reason that I wanted every queen cell there was in the mother colony, which I will explain later.

26th. Fair and warm, gathered 6 pounds.

27th. Fair and warm, gathered 7 pounds.

This record for the 26th and 27th, seems wonderful to me, that a colony casting off an eight pound swarm could muster forces enough to go out and gather nectar and pollen to the amount of 6 and 7 pounds, the first and second days after it had swarmed.

It shows you what an immense amount of nectar was within reach of the bees at that time.

And I have often wondered what the scale would have shown if this colony had not swarmed or what other colonies in the apiary of equal strength gathered during these three days, the 25th, 26th, and 27th of May.

It is my guess that the amount was from 15 to 18 pounds.

Now, if our president will allow me, I would like to digress from our subject long enough to read further from the record of this scale hive during the first half of April last spring.

My bees were set out of the cellar the last day of March.

April 1, 2, 3, cold.

4th, warm, gathered 1 pound from soft maple.

5th and 6th, cold.

7th, 8th, and 9th, snow. The snow fell to the depth of 18 inches, according to the record of the weather man, and containing 2.15 inches of water.

April 10th, sun shone bright, shoveled the bees out of the snow. Flew in the afternoon. Saw many on the snow. I think all succeeded in getting back to their hives before night as it was warm and the snow settled at least 2 inches.

11th, warm, still day. Bees flew strong. Snow settled down to about 12 inches. Scale showed a gain of 1 pound. What! Something wrong with the scale.

12th, warm and still; bees flying strong; snow went down to about 6 or 8 inches. Scale showed an increase of 2 pounds. Will take that scale out and test it as soon as the snow is off.

13th. Weather still and warm; snow settled to 4 or 5 inches. I had begun to look around to find out what they were doing by this time. Bees working on soft maple and scale shows gain of 2 pounds.

14th. Weather fine; opened 12 hives and found an average of three frames of brood in all stages and 1 Hoffman frame of new honey or nectar gathered during these four days, when the snow covered the ground from 2 to 18 inches deep.

I consider this the most wonderful thing that I have ever encountered in the 50 years I have kept bees.

At the time I thought I would report it to our bee journals, but later changed my mind. I was afraid some of the older boys would call me names and I would not be there to defend myself.

Now gentlemen such experiences as this and the flow from dandelion I have just mentioned is what gives older boys a relapse of that disease we call bee fever, and I had it bad last spring. In fact it has stayed with me all summer.

There is one matter we should consider before we decide on whether we produce comb or extract honey.

If you want to produce a crop of honey with the least amount of labor and expense, and receive for your crop one-half what the consumer eventually pays for it, then produce extracted and after you have harvested that crop put it up in 60 pound cans or barrels and send it to some commission man in our large cities. This is the easiest and cheapest way to handle a crop, *but* you will find when you receive your returns from that commission man that it will be still easier to spend your summer's wages.

Again, if you want to produce a crop of honey with the maximum amount of labor and expense produce extracted honey and put it up, in up-to-date packages of from 6 to 24 ounces to the package, and go out and sell it to some man who will in turn sell to the consumer, thereby receiving the full retail price, less one commission.

This will double your bank account, but it will mean lots of good hard work, and a large expense account.

But if you want to produce a crop of honey at a medium amount of expense and labor and receive the maximum amount of money for your crop, my advice is, produce comb honey.

But you will ask, to whom will we sell our crop; we have not the time nor inclination to go out and peddle from house to house.

Let me answer that question by asking you a few questions. Who is it that our wives, mothers, or housekeepers, in our towns and cities, phone to regularly every morning for the necessary provisions to supply our tables each day? Who sells to us as consumers nine-tenths of all the food products we consume?

Why, it is the retail groceryman.

Then he is the man I would cater to in disposing of a crop of honey.

Did you ever go into a first class grocery store and take notice of the stock of goods as displayed along the shelves?

Do you see any honey among these goods?

If not, then we are not keeping abreast with the times and can't expect to receive the highest market price for our crop.

And another thing you will note that two-thirds the goods sold in that grocery store will be priced from 10 cents to 35 cents per package.

For this reason, I pack my extracted honey in glass containers to retail from 10 cents to 35 cents and my comb honey in cartons.

Of course, I sell a great amount of comb packed in plain cases, the old fashioned way, and extracted in tin as ordered, but three-fourths of my sales is put up in small glass packages.

Gentlemen, we read in the newspapers every day of the high cost of living.

I want to tell you it is these small sanitary packages that have increased the cost of living more than any one thing.

These packages are expensive. First, there is the package, labor of filling, expense of labels, and shipping case, and many other expenses when grouped together would astonish you.

Take this jar of honey (for instance) at 10 cents and you are paying 100 per cent more for the honey than the producer received.

When you buy a one pound package of seeded raisins at 15 cents you pay about 200 per cent more than the vineyardist received for the grapes, and when you buy breakfast foods in cardboard boxes you pay from 3 to 16 dollars per bushel for wheat, corn and oats, which our farmers in Iowa are selling at from 40 to 85 cents per bushel.

Now, to get back to our subject, comb or extracted honey, under the conditions as they exist in Iowa, depending on white clover for the most of our surplus.

I say comb honey. I can produce more revenue from an apiary run for comb honey than I can from an apiary run for extracted, and I can put it in the hands of the retail groceryman in proper packages for the retail trade, at one-half the cost and with one-half the labor.

It is dollars that count in the bee business as well as any other business.

Now this may seem to the most of you a rather strong assertion, but if you will give me your attention for a few minutes I will try and prove to you that this can be accomplished.

First I want to say to you that I am in the business of producing honey for the income I receive from the business.

That while I am producing comb honey, I also produce some extract.

This is absolutely necessary if I want to conduct the business economically.

There are certain conditions under which a colony will store some surplus in an extracting super with drawn combs, where they would not do any work in a comb super, and again I often have an out apiary so far from home that I visit it only three or four times during a season, which I run for extract.

And another thing—the older I grow the more I try to avoid all unnecessary work in the apiary and,

I want to confess I'm sixty-three,
And not as spry as I used to be;
I'm wearing glasses that I may see
To properly handle the honey bee.

I am physically unable to do hard manual labor.

For these reasons I am using all short cuts possible in handling my bees.

Now let us go over the various manipulations necessary to produce a crop of honey and I will touch only on such parts as vary more or less from the teachings we find in our books and magazines.

We will commence the fall previous to the production of our crop, say from the 25th of August to the 1st of September.

Our comb honey supers have been all taken from the hives, and in their place have been put shallow extracting supers, containing worker combs, all except possibly the two outside frames, which may contain some drone cells.

It will not be necessary to look to these bees again until after a killing frost the last of September or first of October.

During the month of October I go over my apiaries carefully and examine each colony, if any have more supplies than they need I take out frames of honey from the extracting super and replace with empty combs.

If any are short of stores I add frames of sealed honey in the super, but I *never* take honey from the brood chamber.

These supers are of considerable importance to catch any late fall flow, and again there will be some of the colonies that have produced comb honey whose brood chambers contain too much stores, in which case the bees will carry these extra stores up into the super, thereby relieving the brood chamber.

(I once lost at least one-half of a fall flow from red clover, the first week in September, by not having a super of any kind on my hives at this time.)

Now, I want to say that these supers remain on my strong colonies all the year or from the time the comb supers are taken off in August and until they go back on in June.

They give extra room and ventilation, during the winter, and room for storage and brood during the spring.

In fact they become a part of the brood chambers at this time and when they are changed for the comb supers the bees more readily start work in the sections because they are accustomed to storing above the brood frames.

Our bees in Iowa should be put in the cellar about the 1st to 10th of December. I put mine in rows and tier them up three high, with an alley about three feet wide between; hives facing the alley so I can pass through and note the condition of them at a glance.

The hives are set on the frame, about fifteen inches from the floor, so they slope slightly toward the back of the hive.

I don't expect any moisture to condense and run out of the entrance for my cellar is dry, but I do expect to run water in at the entrance before I set them out in the spring.

Of course the heaviest colonies I place on the first row at the bottom, and as fast as I put them in I break the sealed cover loose and put a piece of section between the cover and hive so the weight of the hives on top will not press down and reseal them during the time they are in the cellar.

This is for the purpose of allowing the moisture from the cluster to escape.

The entrance remains open the full width of the hive and three-quarters of an inch deep.

The second row is treated in the same manner, while the lightest colonies are placed on the top row and the seal of the cover broken.

One word about cellars.

My cellar is 25 feet long, 16 feet wide and 10 feet deep.

The greatest trouble with our cellars is the depth.

I want my bee cellars at least 10 feet deep.

Then you will get proper air space and ventilation without fussing with sub-earth ventilators, if your floors and the sides are of dirt.

Of course, if you build expensive cellars of concrete, thereby shutting out the air, you will need expensive ventilators, otherwise your bees will suffer.

We will now have a rest until the middle of February or about the time of our February thaw, at which time I go down into my cellar and standing still, with the light turned down very low, I listen to the murmur of the bees.

If I hear two or three bees leave the entrance of their hives and fly off into the darkness of the cellar, thereby committing suicide, it is time for action.

I get out my large sized sprinkling can, the same I use in the garden, and fill it with water, sprinkle the fronts and alighting boards, until they are all thoroughly wet, or until the water stands on the alighting board one-fourth inch deep and has run back into the hive two or three inches.

Now this water will remain on the alighting boards for five or six hours before it is all absorbed by the wood and the atmosphere, and if you observe closely you will see many bees, especially in the strong colonies, come to the entrance and load up with water.

This watering I repeat once a week until I put the bees out on their summer stands, and if they become too uneasy during a warm spell in March, I take a sponge about the size of my fist or an old cotton or linen cloth, dip it in a pail of water and lay it close against the entrance on the alighting board.

Experience has taught us that bees confined, to ship by freight, express or parcel post, even in queen cages, require water, then why not if confined in a dark cellar for three or four months. I think they do.

It has been my experience to find brood in a majority of my strong colonies when I set them on their summer stands in the spring. Sometimes as much as one-half a frame of sealed brood and we all know that bees require large quantities of water when rearing brood.

But let us hurry along, it is now spring, and we are wondering when to set the bees out.

If I were to set an apiary of bees out of the cellar in any part of Iowa, I would watch the soft maple and as soon as the first bloom appeared on these trees, the next morning just daylight, if not storm-ing, out would go the bees no matter whether it was March or April, and as I set them out I note the condition of each colony and if any need stores I give them frames of honey in the supers, only at this time I uncap these frames.

A 25 cent steel tooth hair brush, you can buy at any drug store, will do the business.

If I was a young man I would use the Alexander plan of taking from the bees all sealed combs of honey about the first of May, extract the same and feed back. I believe it would pay well for the labor.

I handle my bees very little during the months of April and May.

Of course, I watch the entrance indications, and if I see some colony not up to standard I make an investigation as to the cause.

My colonies are mostly in ten frame hives with a five inch extracting super on top and with plenty of stores, there is very little to do during the spring.

Each year in the early part of April I order one dozen leather colored Italian queens from some breeder in the south to be shipped me to arrive the first of June.

I do this to keep up the standard of my bees, as I don't raise queens and am obliged to use queen cells reared in colonies that have cast natural swarms.

Well, it is, say from the 1st to the 10th of June.

My comb honey supers are ready having been prepared during the winter, the hives are full of bees, and stores, probably four or five colonies have already swarmed.

My scale hive shows a gain of one-half or one pound for the first time this month.

Tomorrow the comb honey supers must go on.

This is the critical time with the comb honey producers.

For your year's crop will depend a great deal on how we handle our bees at this time, and on this first super we place on the hives.

You will note this is an Ideal super, or a super containing Ideal sections.

I use this style of super, first, because it holds thirty-five sections or about what I can comfortably handle when filled and I am not obliged to buy or handle as many supers in the production of a crop.

Second, because I can clean two cases of plain sections in the same time it takes to clean one case of bee way sections, and the sections cost less.

Third, because the shipping cases are more compact and cheaper, requiring a smaller and cheaper shipping crate, and

Last, but not least, because I can use a five inch extracting frame at the outside on each side of the sections in this first super.

In preparing my supers during the winter, I use a blank extracting frame on the outside of each super.

These blank frames I use simply to keep the sections in place till the super is ready to go on the hive.

Next is the sections.

I cut my foundation so it fits accurately the inside of the section, then with a 15 cent camel's hair brush, that you can buy at your drug store, and a basin of hot wax I fasten the foundation to three sides.

Now this method of fastening foundation in sections is far superior to any machine or wax tube and much better; with the brush the hot wax is rubbed into the pores of the wood so that even if you tear out the foundation the edges will still remain attached.

The only way to remove a starter put in in this manner is to cut it out with a knife.

Of course, this is extra thin super foundation.

Years ago I used the same grade of foundation below as above, but I found that before the bees got the upper part drawn out and filled this bottom starter was all gnawed out, nothing left but a mark on the wood where it had been fastened.

Next I tried thin super foundation with the same results.

Five years ago I commenced to use light brood foundation for bottom starters which I have been using since, and I have yet to hear the first complaint.

I have a few bait sections here that will illustrate this matter probably better than I can explain it to you.

Here is an Ideal section in every particular.

Here are two sections that were filled, but not capped.

Note how uniformily the comb is attached to the wood, and here are sections showing how the bees will gnaw away even light brood, under certain conditions.

And let me call your attention to the fact that, while the center of these starters are gnawed away, the corners remain intact so there will be no pop holes or passage way in these corners when this section is finished.

And here is a section with a starter that any bee kepeer will say is thin surplus foundation, which was light brood when I placed it in this section.

These conditions are easily accounted for.

Our empty supers are put on the hives next the brood and as the young bees leave the brood nest for the supers, the first thing they encounter is these bottom starters, and here is where they commence their work.

A crop of honey produced from foundation, put in sections as I have shown you, will weigh from one to two pounds to the case more, and will average one grade higher and bring on any market 25 cents per case more than it would if we used a small top starter only.

And another thing, these sections of honey will stand twice the rough usage in shipping that a section will where only a small starter is used.

Now, let us put this super of sections on the hive.

We will place it at one side of the colony and on the other side an empty extracting super which has been stapled to a regular bottom board.

The entrance is closed tight and a cover on.

Don't forget that each of my colonies has a five inch extracting super on at this time.

Now, with your left hand remove the cover while your hand is working the smoker.

As soon as the bees have left the top of the super, remove a frame and either shake the bees back in the super or at the entrance. Then set it aside.

Now, with the left hand pry each frame over towards this empty space and smoke the bees down into the brood chamber, not that we care about the bees but we want to be sure the queen is down in the brood chamber.

And as you pry these frames apart, select one that is seven-eighths full of sealed honey, all sealed but a few cells on the ends, and across the bottom.

As soon as the young bees return to cover this frame take it out with the bees and put it in the comb super, in the place of the blank frame, on one side.

I then select a frame similar to the first for the opposite side.

Now, remove the extracting super from the hive. Put it on the comb super and return both to the hive. There you are, gentlemen.

These bees were storing honey in that super *before* it reached the hive and had been for a week or ten days, and they will go right on storing until it is full.

And what is of immensely more importance is the fact that they have been secreting wax for the purpose of repairing these old combs and capping this honey they have stored during May, and will continue to do so and draw out foundation as soon as this comb super is in position on the hive.

I have many times seen the row of sections next the bait combs in these supers drawn out ready for the storage of honey the next morning after these supers were put on the hives, and I consider my crop of comb honey assured just as soon as my bees are drawing foundation and storing honey in this first super.

One word in regard to the secretion of wax and building comb in the production of comb honey. We all know that nature is a lavish provider; she causes hundreds of blossoms to appear on our fruit trees in the spring where one apple or plum is matured on the tree. There are fifteen or twenty queen cells produced in the hive where only one or two is needed, we often see 400 or 500 drones where only one is necessary. Is there any reason to think our bees would not be able to supply the necessary amount of wax to build comb for the storage of any and all honey the field bees are able to gather no matter how heavy or fast the flow may be?

Our wax workers are busy twenty-four hours each day. Would it not be reasonable to believe they would be able to prepare combs, or, what would be still easier, draw out foundation sufficient to store all honey the field bees could gather during ten or twelve hours work, especially if they have the help of the full force of field bees each night? And I think they do, I don't believe there is a bee in a normal colony that loafs or rests for more than a few moments at a time day or night during a honey flow, if there is work that should be done in the hive.

The reason I selected these frames two-thirds full for the comb super is that I want all my white clover honey in my sections, and when these combs are taken out with the sections later in the season, they are set aside to use for feeding back in the fall or the coming spring.

Returning to this extracting super, I select two full frames of honey and place them on one side of the empty super on the bottom board, which will now become the lower half of a divisible brood chamber.

I then remove all the frames containing brood and place them next to these frames of honey.

There will probably be some empty frames, and frames with honey, still in the super on this colony.

If so, I use a bee escape between the two supers, put on the cover and proceed to the next colony, which I treat in the same manner, and so on till this divisible hive is full of brood and honey which will then contain twelve five inch frames with more or less brood in each frame and bees enough to look after this brood. Eight full frames of honey, and a young queen.

Now, I forgot to state that before I put any brood in this hive I take one of the queens I ordered from the south, to be delivered the first week in June, remove the cork and with the small blade of my knife remove most of the candy, leaving only enough to confine the queen, three or four hours, and lay the cage on the bottom board near the entrance.

These artificial swarms are then set aside in the shade until towards evening, when I remove them to some out apiary, or if working at an out apiary I bring them to the home apiary, open the entrance and by morning they will be able to take care of themselves.

From forty colonies in my home apiary last spring, I made twelve in this manner which produced twenty-three cases of comb honey, a little less than two cases each during the season.

I consider the taking of this brood from my strong colonies at the time of putting on the comb supers a benefit for it has a tendency to discourage swarming.

In about a week or as soon as the brood begins to hatch in these artificial swarms I put a comb super on each one the same as the first super used on the other colonies, and when my stock of laying queens is exhausted I use sealed queen cells from some colony that has cast a swarm.

I have entered into details in regard to these artificial swarms in order to show you how I convert the low grade dandelion honey gathered in May into bees, and get a fair crop of honey from them the same season.

From this time until the close of the season I pursue the same methods as are generally used in the production of a crop of comb honey.

At the close of the season I sort my comb supers and group together all unfinished sections that are more than half filled, returning them to my best colonies and feed till finished.

This year I had 280 such sections which I placed on three of my strong colonies and fed sixty pounds of extracted honey.

They were all nicely finished in seven days.

Now, for the results.

I have not kept a record of my out apiaries for the reason they are changed about more or less each year, but the home apiary like one of our family is always present, and, of course, it receives the best care and attention and the record is this:

From the home apiary and one out apiary in 1910, 100 colonies run for comb honey, my crop was 8,000 finished sections and 3,600 pounds extracted honey, an average of 80 sections and 36 pounds extracted honey per colony.

Figuring the average wholesale price for the last five years for comb honey at 15 cents, which is low, and 10 cents per pound for extracted, which is less than I actually received.

My average income from each colony that year was $15.60 with increase of seven swarms.

1911 in my locality was a dismal failure. The only season in the thirty-five years I have kept bees in Iowa when they gathered no surplus.

While this was a misfortune, the winter of 1910 and 1911 was a calamity.

I am going to confess I lost that winter almost 90 per cent of my bees, not because they starved, but on account of the poor stores they were obliged to consume.

We can't winter bees in Iowa on bug juice and cider.

Had I taken these stores from them and fed granulated sugar syrup enough to have carried them through the winter, returning their stores after setting them out in the spring, they would have returned me during the years 1912 and 1913 500 per cent on the investment for sugar, but sugar was $8.00 per hundred that fall, and I did not have a particle of bee fever in my system.

1912 from twelve colonies in my home yard, I produced an average of ninety sections and twelve pounds extracted honey, an average of $14.50 per colony, and increased to forty colonies, or 233 per cent increase.

1913 my average from forty colonies in the home yard, was 127 sections and 25 pounds extract, an average income from each colony of a little over $22.15, and my increase was 42, being a trifle over 100 per cent.

These bees received my best care and attention to such an extent that while they were all grouped together in the home apiary, during the month of May, at the close of the season they were in three different yards of thirty-five, twenty-five and twenty-two colonies, thereby giving them the advantage of pasturage.

And another thing, drouth prevailed during the entire season as the record of our weather observer will show.

Let me give you the rainfall for the season:

June	1.18 inches
July	1.80 inches
August	1.65 inches

It seemed wonderful to be where the bees found this nectar after the first of July.

I think we can credit the white sweet clover that grew by the road sides with furnishing the greater part of it.

I don't claim to be an expert in the production of extracted honey, and am not able to produce any more extracted honey than I can comb honey per colony, the best report I have seen in our bee journals this fall is that of H. H. Root on the yield of Mr. Holterman, of Ontario, one of the largest producers of extracted honey in the east, who with modern utensils and plenty of help produced something like 100 pounds per colony, which at 9 cents per pound, the price in Iowa, would bring him an income of $9.00 each, his best apiary producing 160 pounds, or an average of $14.40 each. I think you will all admit 100 pounds or $9.00 per colony to be a fair average for the extracted honey producer the last year.

Comparing this with Dr. Miller's 266 sections per colony from seventy-two colonies, or an average of $39.90 per colony, or even my own average of $22.15 with an increase of 100 per cent, it would seem to me a good business proposition for you to produce more comb honey.

And another thing our western brothers are each year producing more and more extracted honey on account of the high freight rates and breakage. For this reason we, as producers in Iowa, with a market in our own state, should produce more comb honey.

I have regular customers whom I supply each year and when my own stock is exhausted I buy to supply my trade.

I have found that it is almost impossible to buy Iowa white clover comb honey after the first of December, and if I am fortunate enough to locate any, the price will be so high that there will be no profit in handling it, or, many times, an actual loss.

For this reason I advise you to produce more comb honey.

The demand is greater than the supply.

But not so with extracted honey.

I can buy the finest white clover every fall at from 8 to 9 cents per pound wholesale, because your extracted honey comes in competition with western honey, which is shipped into the state by the carload every year, thereby increasing the supply until it is greater than the demand, for this reason I advise you to produce more comb honey.

There is a legend that has been handed down to us from olden times that reads something like this: A colony or an apiary of bees will produce twice as much extracted honey as they will comb honey, under the same conditions. Now this might have been true when they produced comb honey in boxes six inches square and twelve inches long, with glass sides, as they did when I was a boy, or even later when they used a small triangular piece of starter in the top of the section only, but not today.

With our present management and full sheets of foundation in the section I don't believe there is a man in Iowa that can produce 50 per cent more extracted honey than I can comb honey (under the same conditions); no, not even 25 per cent more.

You will have to show me, I am from Missouri.

And after reading the report of Dr. Miller's crop for 1913 in the American Bee Journal it seems to me that the rule should be transposed so it will read something like this: An expert can produce twice the revenue from an apiary of bees run for comb honey as can be produced from a similar apiary run for extracted honey.

In conclusion I want to say that it seems to me a shame, almost a sacrilege, that honey with the color, body and flavor of our Iowa white clover honey should be extracted and put up in nasty, rusty second hand tin cans and sold for 8 to 9 cents per pound, even in a wholesale way.

If some of our great corporations had the control of all this crop, they would put it in proper containers, and by advertising it, even at one-half the expense they are to in advertising Karo Glucose, it would be all sold at 25 to 30 cents per pound, which would be only a fair price as compared with other food products at the present time.

Honey is one of our Creator's choicest gifts to man.

It contains as much nutriment and life sustaining properties as butter, cheese, or meat and the price should be just as high.

Ladies and gentlemen, for your patience and attention, I thank you.

BEE KEEPERS' LEGAL STATUS.

RUSSELL E. OSTRUS, DES MOINES, IOWA.

It is not my purpose in the presentation of this paper to cover all the legal questions which might be suggested by the title of this paper. However, I will treat on the subjects that I feel it is possible for me to partially cover in the time alloted for this paper.

Originally bees were considered as coming under the rules which were applied to the wild beasts or birds or fish but as the industry of man has gradually placed the bees under such confinement that they may be handled similar to the method of handling domestic animals, our own courts have gradually applied the same rules of law for the bee as is applied to domestic animals until at the present time we find that as near as practicable our courts are treating the bees under similar rules as they treat the domestic animal.

Bees are by nature ferae naturae (wild by nature); but when hived and reclaimed a person may have a qualified property in them by the law of nature, as well as the civil law. Hiving or enclosing bees gives property rights in them to the person who has hived such bees. An unreclaimed swarm, like all other wild animals, belongs to the person who first takes control of them and continues to control them. It is the act of hiving that gives a person property rights in bees. If a swarm of bees fly from the hive of another, his qualified property continues so long as he can keep them in sight, or in other words, while he can distinguish and identify them in the air, and he possesses the power to pursue them. Under such circumstances no one else is entitled to take them.

If any domestic animal of one person strays onto the premises of another the owner of such domestic animal has no right to follow such animal onto the premises of another and take such animal back to his own premises, because by so doing he becomes a trespasser. However, the absolute right of ownership would still continue in him. Now the same rule applies to bees because when hived they are considered as being under the same rules as domestic animals, although they cannot be controlled in their every act as is the case with most domestic animals.

There are a number of decisions by our higher courts that have held that when bees in swarming leave the owner's hive and have gone into a hive or a tree on the premises of another that such owner may maintain an action in damages against a third party who has entered the land, hived the bees, and taken the honey away.

In case bees have been taken away from the owner or are being wrongfully detained from him, such owner may bring an action of replevin and either recover the specific bees or their value, the same as may be done for the recovery of any other personal property.

Having now partially described the property rights in bees we will next turn to the criminal liabilities as applied to bees.

Many of the state legislatures have considered passing an act making it a crime to poison bees, and some have passed such acts. Section 1247, Revised Statutes of Kentucky, provides that if any person on land or premises not in his possession or under his control shall lay or expose any poisonous substance with intent to destroy honey bees he shall be fined not less than five nor more than fifty dollars. Section 7161 of the Statutes of the State of Washington is much similar to the Kentucky statute except that it includes unlawful or malicious killing as well as poisoning, and places the fine at no less than ten dollars or more than one hundred dollars. Many other states prosecute poisoning or malicious killing of bees but it is done under some general statute such as our statute of malicious destruction of property. It is a well established fact that a person has no more right to destroy the bees of another than to destroy any other property of another.

It is, indeed, probable that in every state in the United States a person could be prosecuted under some form of larceny for the stealing and carrying away of any hive or other contrivance containing honey or honey bees. However, the legislature of the state of Ohio has passed the following special statute applying to bees, Revised Statute of 1890, section 6840, provides that "whoever unlawfully enters the premises of another for the purpose of disturbing or carrying away any box, gum or vessel containing bees or honey, or injuring or carrying away any such property shall be fined not more than five hundred dollars or imprisoned not more than sixty days or both. The state of Nebraska passed a similar statute in 1879, section 81, which also includes poisoning or malicious destruction of bees as well as the stealing, but the fine shall not exceed one hundred dollars and such person shall be confined in the county jail not less than ten nor more than thirty days, and such person shall be liable to the party injured in double the value of the property stolen, injured or destroyed. The state of Connecticut has a statute which differs from the statutes of any of the other states which I have examined. It (section 1460) provides that every person who shall place upon the premises of another any tub, box or other contrivance for the purpose of enticing swarms of bees from the premises of their lawful owners shall be fined not more than seven dollars or imprisoned not more than thirty days.

It would be possible to enumerate many statutes from other states which would in some manner protect the industry of bee keeping, but I feel that from our discussion so far we can readily determine that it is the thought and aim of the public in general to foster and protect the industry of bee keeping just as completely as any other legitimate industry, and in some ways there has been an unusual amount of attention given to legislation which is applicable only to the industry of bee keeping. Yet I feel that this can be easily explained, and that explanation is that the bee is so much different in every respect from any other living thing which is treated as domestic animals, that special legislation must naturally follow.

Having now shown that bees are considered under practically the same rules of law as any other property, it must naturally follow that the owner of bees is also liable for any damages caused by his bees.

We have very few decisions by the Supreme Court of Iowa on the subject of bees but I have found two Iowa cases in which I think our Supreme Court has given some very good opinions regarding the rights and liabilities of bee keepers, and with your indulgence I will read a portion of these opinions. In the case of the *State of Iowa vs. Victor Repp*, reported in the 104 Iowa, page 305, we find the following discussion: "Wild game is under the control of the state, and only becomes the subject of private ownership when reclaimed by the art and industry of man. A somewhat different rule applies to bees, though ferae naturae. These have a local habitation. Blackstone states: 'It hath also been said that with us the only ownership in bees is ratione soli; and the charter of the forest, which allows every freeman to be entitled to the honey found within his own woods, affords great countenance to this doctrine that a qualified property may be had in bees, in consideration of the property of the soil whereon they are found.' The same rule is laid down in Cooley on Torts, 435, where it is said that bees 'have a local habitation, more often in a tree than elsewhere, and while they may be said to be within control, because the tree may at any time be felled; but the right to cut it is in the owner of the soil, and, therefore, such property as the wild bees are susceptible of is in him. By the law of nature, the person who hived the swarm would be entitled to it; but, under the regulation of property rights, since the institution of civil society, the forest, as well as the cultivated field, belongs to the owner thereof, and he who invades it is a trespasser.' "

The case of *Parsons vs. Manser*, reported in the 119 Iowa, page 88, was an action for damages where plaintiff's horses were stung to death by defendant's bees. Briefly the facts are that the plaintiff had hitched his team to a post a little west of the gate leading to the house of the defendant, in the highway south of the house, and about five feet from the fence. There were two bee gums about twenty-five feet north of the post in defendant's yard, and three more ten or twelve feet farther on. Trees stood close together west and north of this yard, and shrubbery and bushes to the east. The only unobstructed passage was to the south and southeast. Shortly after the horses were hitched to said post they were attacked by the bees. The horses plunged forward and in so doing overturned two of the bee gums. Immediately the horses became covered with bees. Shortly thereafter the horses died from the bee stings thus received. The court, in rendering its opinion, gave the following discussion:

> "The plaintiff was entitled to the free use of the highway, and had the right to assume that those keeping animals of whose mischievous nature everyone is presumed to have knowledge would exercise reasonable care for the protection of others from their depredations. True, bees may not be confined like the wild beasts. To roam seems to be necessary to their existence. They fly great distances, and, if interfered with, or their course obstructed, are likely to resent by the use of their only available weapon. Everyone harboring creatures ferae naturae is charged with knowledge of their habits and evil propensities."
>
> "There is no reason for an exception in favor of the bee. Indeed, their disposition to make themselves felt is a matter of common observation or experience from early childhood. But they are very useful, the apiary often furnishing a livelihood, and generally proving a source of profit; and the books seem to look with more favor upon the keeping of animals useful to man than those which are worthless save as curiosities. For this reason the rule of absolute liability for the consequences of injuries received from wild beasts kept in confinement, declared in the earlier decisions, even of regarded as sound, ought not to be extended to creatures so nearly domesticated."
>
> "Liability for safe-keeping depends not so much on the classification of animals into wild and domestic as upon their natural propensity for mischief. If they are ferocious and savage, like the lion, tiger, etc., the keeper is bound to know the danger incident to their confinement; and the mere charge of not having been so restrained as to avoid injury is tantamount to an allegation of negligence. But bees, while generally classed as ferae naturae are so useful and common as to be all but domesticated. Keepers of the apiary have carefully studied their habits and instincts, and control them almost as certainly as domestic animals. Serious injuries from them are very rare, and, unless some want of care in their management is shown, the owner ought not to be held responsible for damages occasioned by them. Nothing could be done by the keeper of bees to protect all from their attacks. These might occur miles from the hives, and beyond his reach. But they have fixed habitations. The location for these is always a matter for his determination, and it is not too much to exact of him the exercise of ordinary prudence in so placing the hives as to avoid unnecessary danger to those who are likely to make lawful use of the premises or the highway nearby. In other words, he must so use his own as not to interfere with the rights of others."

The plaintiff was given judgment by the trial court for the damage to his horses and upon appeal the Supreme Court affirmed said judgment.

One of the questions of great importance at this time is, can any city or town council compel a bee keeper to remove his apiary from within the corporate limits? It is impossible to completely answer this question because of the fact that we had had very little law on this subject and there have been very few cases in which this question has risen, and in those cases where the question has come up the courts have seldom given a direct opinion on the subject. One engaged in the business of keeping bees may not rightfully keep his bees in a place upon his premises so as to annoy his neighbors. This rule was substantially laid down by the New York Supreme Court in the early case of *Olmstead vs. Rich*, 6 N. Y. Supt., 826, and many other courts have very closely followed this case in the more recent decisions. The city councils of several cities have at different times threatened to pass and have passed ordinances which made the owning, keeping or raising of bees within the city's limits a nuisance per se. Ordinances of this character have been held to be entirely too broad but the cases on record are very limited. About the only case directly in point is the case of *Clark vs. City of Arkadelphia, Arkansas*, reported in the 52 Ark., 23, wherein that court held that:

> "Although bees may become a nuisance in a city, an ordinance which makes the owning, keeping, or raising them within the city limits a nuisance whether it is in fact so or not, is too broad and is not valid."

The precedent established by the Arkansas court in this case is valuable in that it is stimulating good law for the protection of the bee keeper and his property.

PART X.

Papers on Live Stock, Agricultural and Miscellaneous Topics, Bulletins, Etc.

THE RURAL SOCIAL CENTER.

BY MRS. E. L. VAN HOUTEN, HAMBURG, IOWA.

(Read before the Farmers' Institute, Sidney, Iowa.)

In the current press, two widely diverging pictures of farm life are given us. A sensational writer visits a tenant home where abject poverty reigns supreme, and in vivid language portrays the drudgery which he claims is the common lot of farm women. At great length he dwells upon the loneliness, the monotony, and the narrowness of vision which these women know, forgetful of the fact that their city sisters in like financial straits have much less of all (save loneliness, perhaps) that goes to make life enjoyable and worth the living.

On the other hand, a rural enthusiast is entertained at some palatial farm residence, and *he* tells us in glowing terms of the luxury of present day country life. He pictures the mistress of broad acres as indeed queen of her realm. In her strictly modern home are to be found all the conveniences of the most luxurious city apartment house. A gasoline engine is her obedient servant, performing the most menial tasks with matchless skill and dexterity, while a magnificent touring car is hers to command whenever the call of the open road shall lure her from the peace and quietude of her enviable habitation.

But you and I know that neither the one nor the other is the true picture of *typical* country life. The typical country woman is a woman of moderate means. She may be the wife of an enterprising tenant farmer, or her home may be burdened by a slowly decreasing mortgage. In either case, she realizes how necessary it is, indeed, that she practice the strictest economy. To be sure, she dresses herself and her children neatly, and the best of reading matter finds its way to her table. She has plenty of all the necessities of life and yet there is much in her surroundings she would change if she could. Her neat little cottage is not modern, and she and the children grow almost resentful sometimes because the water bucket and the wood box are, as the children put it, "eternally empty." The money that should have gone for a gasoline engine and fixtures, had to build a new hog shed and pay the interest, and "John's" promise to pipe the water into the house was tactfully forgotten by his wife because crops were so poor in their locality. And there is monotony. During the busy seasons of the year when even the poky old driving horse must be on duty in the field every day, the farm woman's eyes often follow longingly the trail of dust that tells of passing autos, and on particularly strenuous days, when she is over-tired and nerve wearied, the fluttering veils in the fleeting cars, seem but to mock at her loneliness and to emphasize her deprivations. It is then she whispers to herself that poignant little phrase that has so imperiled the proper balance between city and rural population, "I wish we could go to town to live. It would be so much more enjoyable to live there and so much better for the children."

And they go to town. And many of their neighbors with them. It may be for better school privileges; for more social advantage; or because of the scarcity of farm help. But whatever the reason, the fact remains that they go, for statistics show a steadily decreasing population in this and many other states. We are appalled by the fact that this is so, but surprisingly unconcerned about the reason or the remedy. And there is a remedy as well as a reason.

Out in Putnam county, Illinois, is a country community from which the people have no desire to go. Those familiar with the situation there have pronounced it the most ideal country community in the United States. The centralization of social interest here began in a small way when a Grange was organized. It was rapidly furthered through the efforts of a country church in which the whole neighborhood met regardless of denomination or belief. At the Grange, all matters of special interest to the community were discussed. Farm problems of one kind or another, such as cropping systems, co-operative buying, and more efficient labor. School problems were brought up for consideration, and this quickly led to the consolidation of the township schools. A man named John L. Swaney and his wife gave twenty-four acres for the campus of this school and the concentrated effort of all concerned have succeeded in making it the pride of the school world.

In Indiana, the state which now leads in the number of its consolidated schools, the co-operative spirit has been furthered by the school consolidation. The township schools have made ideal meeting places, and extensive school programs have often been the means of interesting the community in its social welfare.

Michigan takes the lead in the number of its Farmers' Clubs. It has more than one thousand local clubs and a strong state organization.

Iowa is far behind in the matter of rural organization, and much the pity, for, quoting from a late periodical, "We have come to the place where the progressiveness of a state may usually be very accurately measured by the number of live country clubs within its boundaries." But Iowa is awakening, they further tell us, and already has about 150 live clubs although her state association is less than two years old.

The main purposes of Farmers' Clubs seem to be, according to their various constitutions and by-laws, discussions among the farmers concerning more farm efficiency, better roads, better buying and selling methods, and better laws for farmers; for their wives, work is taken up along the lines of Home Economics, labor saving methods, and child welfare. In many places the fields of literature and science have been invaded, much to the pleasure and profit of the club members.

I read the other day a somewhat amusing anecdote of how one country club came to be organized. Two women lived in sight of each other's homes, but did their shopping in different towns. They met one day at the funeral of a mutual friend and one of them said to the other: "Do you realize that this is the first time we have met face to face in fifteen years?" The neighbor who overheard the conversation determined then and there that he would see what could be done in the way of neighborhood organization. A club was organized and they found it answered a long felt need.

When I spoke to a friend, one day, about the possibilities of rural organization, she sighed and said: "But I am so busy now I don't see how I could take up anything more." It is true, we farm women are busy, but it is this overworked condition that the rural social center has been able to remedy. When, up in Minnesota, the first co-operative laundry was started in connection with the co-operative creamery already in operation, the farm women of the surrounding country were able to breathe great sighs of relief, especially in the busy season, and neighborhood friendliness was revived in consequence of one burden being lifted from their shoulders.

What may be done through community work is concretely shown in the story of what it meant to an isolated little woman in the heart of the corn belt. She lived on a small, unproductive farm which was heavily mortgaged. She had no driving horse and they felt they could not afford a telephone. So her only means of keeping in touch with the outside world were her occasional trips to town with her husband and the small neighborhood gossip which the children brought home from school. The neighbors, according to the present rule in country communities, no longer visited and she was left out of the telephone chats which most of the women around her could indulge in. There was no gainsaying the fact, her life was extremely narrow and monotonous. In her girlhood she had been vivacious, entertaining, and extremely popular; the center of the village crowd in which she lived. But she had married badly, people said, and with her marriage she had been forced to take up an entirely different way of living. At first she had been bitter and resentful but as the years wore on and her work increased, as it did with each new baby, she seemed to have neither time nor heart for anything but a sort of apathetic resignation to the fates which bound her.

Then the new teacher came. Heretofore, because the schoolhouse was so far from town and in such a bad state of repair, only inefficient little high school girls who were in danger of not getting a school at all were the only sort that could be persuaded to teach in it. But the new teacher was different. She was a matured and experienced woman who had lately moved into the neighborhood. Therefore, the neighborhood interests were her interests, and she began at once to take the whole community tactfully under her wing. Her first work lay in waking up the children to the fact that they were the coming citizens of the land in which they lived. Then by carefully arranged programs and special days she succeeded in interesting many of the parents, not only in the school, but in the community at large. When the time seemed ripe she brought up the subject of club organization. A few responded. Enough to start the ball rolling.

And so it came about that our little friend, who up to this time had been too busy (she thought) to attend any of the school programs, was surprised one day to see one of the leading ladies of the community driving up to her door.

"O, Mrs. J——," called the lady, "I am on my way to our Country Club, and I am so anxious to have you go with me. We want you for a member." The spirit of friendliness was already becoming manifest, you see.

Mrs. J. demurred and plead a lack of time, but Mrs. L. insisted, and in a half-hearted fashion Mrs. J. donned the faded and much worn serge that had done service far too long.

Coming home, she admitted she enjoyed herself and learned some helpful things about the care and preservation of meats, but when asked to join she emphatically declared she could not spare the time to even attend the meetings, let alone for any program work she might be called upon to do. But when Mrs. L. called for her two weeks later, she went, and she kept on going because she was learning all the while new ways of economizing time and strength, and the interchanging of ideas was so interesting and helpful, she seemed to be taking up her life anew once more.

A Short Course in Home Economics was planned and Mrs. J. did not miss a session. But the climax came when a talented lecturer gave a talk on The Real Purpose of Home Making. She not only told how to keep house and take care of a family, but emphasized the reason why the work is worth the best effort that can be put upon it. She spoke of how stockmen have found that by care and feeding the worth and productiveness of livestock may be doubled, and plead for the same study and thoughtful care in the feeding and housing of God's masterpieces, human beings. If properly balanced rations are necessary to the highest development of lower animals, how much more essential is it that those who feed men, women and children shall understand the food combinations that make for the development of the highest type of mental and physical strength.

Mrs. J. listened in wonder. When the speaker had finished, she turned to her seat mate impulsively. "How differently the world looks to me now! I have always looked at marriage as something girls are foolishly led into to shut them away from careers, or at least from paying vocations, but how wrongly I have thought! Why, it is the grandest profession the world, isn't it, this feeding a family for efficiency! How glad I am that I have awakened to my opportunity." Her eyes shone and her neighbor looked in wonder at the transformation in her, for she remembered how listless and unresponsive this same little woman had been when she had first attended the club meeting. You see, she had found her work and had adjusted herself to her environment and these are the things, and these only, that make for happiness—the finding and the doing of the work intended for us.

No longer did little Mrs. J. envy the memory of the happy days of her youth; no longer did she crave for her own the advantages of town women's children; for with community organization came school consolidation, and with that, educational opportunities not excelled by any of the village schools around them.

Best of all, what has been done in other communities by the rural social center may be done in yours and mine when we awaken to the limitless opportunities of country living.

COLD STORAGE.

C. H. DEUR, MISSOURI VALLEY, IOWA.

When the Committee arranged the program, and assigned the topics they evidently had in mind there would be held a very good meeting, and that the many excellent papers read and subjects discussed here ought to be preserved.

At this time the near closing of this splendid session, I know of no better way than to place some of them at least in "Cold Storage."

We do know all fruits and vegetables placed in storage do not all keep well. The same rule will apply to subjects and discussions.

The caption of the subject assigned me does not designate whether natural or artificial so will assume either of the two as we desire a wide range or base to stand on.

We all have had some experience I am sure with the cellar or cave used for the storage and keeping of fruits and vegetables, usually with good success but often times with wholly or partial failure and unsatisfactory results. I believe fruits and vegetables placed in such storage that do not stand and keep well is due to poor conditions, inadequate ventilation of the cave or cellar or out of condition, immatured, low quality of the product selected for storage.

The outside cellar or cave properly constructed is far superior to the cellar being a part or beneath the house. In the latter during cold weather people very naturally close and calk up all outside openings or ventilators in order to keep the parlor floor warm and the things down cellar from freezing. Let us go down in that cellar and see what we find. There will be usually a warm, odorous and sometimes a foul atmosphere. First period seems nice and warm, produce keeping fine. A little later, we begin to find noticeable a damp, clammy condition, then a breaking down and decay of our fruits and vegetables. Before spring what we have not consumed must be carried out, unfit for any purpose. To the city merchant we must go for our supply, until, if fortunate enough, we get a crop. If so, down in that same cellar it goes, again with disappointment as before, remember that the parents of next year's mosquito crop are probably wintering in your cellar.

An outside cave is our ideal cellar. One we believe within the means, and best suited to the average farmer, is of concrete construction, eight feet in width and fourteen feet in length. The side walls should be three feet high, then top with half circles making seven in the clear in center. It should have a sub or vestibule entrance with double doors. There should be a fourteen inch ventilator placed in the ceiling, and at or near the rear end or farthest away from the door. The intake of air should pass through a twelve inch tile or underground conduit, placed four feet below the surface, and laid on a straight and even grade. Take in the air fifty to sixty feet away from the cellar and enter same at front near the floor line, farthest away from the outlet. If the ground is such as to give the intake line a good steep grade the better the ventilation.

The farmer or grower of fruits and vegetables, who will construct for himself such a cave or cellar as we have feebly described above, and store in same good, well selected produce, he will be amply paid for his labor and investment. In addition to the profitable side of the question he will have the satisfaction of living the year out off the product of the farm.

To substantiate our claim we cite you to bulletin number 144, page 357, by the Iowa State College at Ames, where Prof. Laurenz Green says of Cellar Storage in comparison to Cold Storage, "such varieties of apples as Winesaps and mammoth Black Twigs kept until May in excellent condition."

When we can keep apples for market for seven months it speaks well for cellar storage.

For general purposes on the farm and in the home, we advocate a storage as outlined above. For commercial and use on a large scale, there is but one, that of chemical, or forced circulation through pipes passing around or through spaces in which fruits and vegetables are placed for preservation, and that is a very expensive method to install and operate.

THE SILO ON THE FARM.

BY CHAS. LAU.

(Read before the Clinton County Farmers' Institute, DeWitt, Iowa.)

When land values have reached the $100 mark and over, the farmer is forced up against the serious proposition, what to do to make the returns for his farm represent a reasonable dividend on the capital invested. Though land values may rise somewhat higher, there is no prospect that crops will be larger or prices higher than they have been in recent years, known as years of prosperity. With still lower prices or smaller crops or both at the same time, investment and dividend will still more grow out of proportion and farming will become discouraging as a financial enterprise. In the face of such discouraging possibilities at any time in the near future, what can be done to restore farming to a reasonable interest paying basis? I will answer. We must and we will do what peasants of older countries on much higher priced land are doing: farm more intensively—farm better. Not only must we guard against the habitual wastefulness by stuffing up all the leaks; not only must we introduce all labor saving implements and four-horse machinery to curtail the exorbitant wages; not only must we economize and improve all along the line in the manner of seed—selection, cultivation, care of live stock, fertility of soil, etc., but we must likewise be awake to the adaption of such new methods and systems as evolution in progressive farming will from time to time advance. By this I do not mean that we as farmers shall hastily grasp at every new-fangled scheme sprung upon an unsuspecting community as though it were a genuine gold brick, but adapt such changes as commend themselves to a careful and unprejudiced judgment, and of such, I contend, is the silo on the farm.

DOES IT PAY?

The first question in this, as in all enterprises, is, does it pay? If my memory serves me right, we were told a year ago on this very platform by State Dairy Commissioner Wright that where ordinarily on the farm it required three acres to keep a milk cow, with a silo it required but one. This statement in another form would mean, where you are keeping thirty head of cattle now, with the aid of a silo you can keep ninety. In other words, as soon as your silo is filled you can plow up two-thirds of your meadows and pasture and plant it to potatoes or corn. Such are the possibilities of the silo as presented to you by the best authority in the state, and he certainly knows what he is talking about. Assuming that his statements are correct in fact, can there be any doubt as to the profitableness of the silo on the farm? Ensilage feeding has long passed its experimental stage and nowhere in print or by word do we notice a single word of objection raised to it, while all trials at experiment stations give unqualified endorsement to the feeding of corn ensilage. No one would deny the benefits of feeding beets to cattle in winter, yet the government bulletin, No. 22, reports slightly better results from corn silage than beets, say nothing of the far greater cost of producing beets. All opposition and objections urged against silage feeding in its early stages, and in a measure justified by the blunders committed by inexperience, as is the case with most ventures in their infancy, have gradually been overcome and today the Borden Condensed Milk Company, that once ruled out ensilage as an objectionable feed for its products, issues pamphlets with instructions to its patrons how to build silos and handle corn for the best results in silage feeding. The Kalamazoo Silo and Tank Company, one of a half dozen concerns, has shipped 2,800 silos to various parts of the United States, mostly to Wisconsin, Michigan, Illinois and Minnesota, with a rapid increase in the demand. The silo by virtue of its great merits is gradually working out its own salvation, and this without any promoters to boom the introduction for financial gain, for there is no patent on ensilage as there is on stock foods.

WHAT IS ENSILAGE?

Ensilage or silage is corn, clover, grass, beets, or any green, succulent crop cut up with an ordinary feed cutter and hoisted into an air tight tank called a silo, where it will heat up to 180 degrees, ferment and produce carbonic acid, which, with the exclusion of oxygen, will preserve the green feed indefinitely. It comes out moist, slightly discolored, with a sweet-sour taste and odor and often warm. It has been known to keep seven years in this condition without spoiling. I have myself fed ensilage three years old which was perfectly preserved. Corn silage is greatly relished by all farm animals, including hogs, sheep and poultry. Although a rich, succulent and palatable feed that goes well with, and greatly helps, the perfect assimilation and digestion of other farm feeds, corn silage is not a well balanced feed in itself and should not be fed exclusively, being too long in carbohydrates and too short in protein. Its protein contents are only $2^1/_5$ per cent, about half of what green clover and blue grass represents. Nevertheless, the importance of the natural juices in the digestive functions and health of the farm animals can never be satisfactorily demonstrated by laboratory analysis. We all know as farmers by experience how grass will put life and gloss and health to our cattle; how it will round out and make a hog of the runt that was too measly to go with a fat lot. Just as vegetables, fruits, and so-called condimental foods are indispensable for the health of the human family, so are they likewise necessary for the thrift of live stock, that are often carried six months in the year on dry feed. This is a severe test for animals that are naturally ruminants and habitually browse on juicy feed; no wonder they emerge from this ordeal and this period of badly balanced rations, as wrecks of their former selves, thin in flesh, rough in hair, scrambling for the first green blades of grass. The silo will in a great measure counteract this great deficiency of the dry food season and it forms the connecting link between the end and beginning of the grass period. Moreover, there will be less trouble in the cow stable at calving time, less abortion, less of such difficulties as befall animals that are out of condition.

CLOVER VS. ENSILAGE.

You will answer that clover hay will remedy all these troubles. I admit the great advantages of clover hay to balance up corn and to promote the general health of live stock, but there are serious obstacles in the way of a clover hay crop not common to a silage crop. In this latitude only one year in three can be put down as a clover year, not always can we get a perfect stand, nor is the weather always settled in June to cure it in the best shape. Nevertheless, in the face of all these difficulties, we are justified in using our extreme efforts to secure a crop of clover, and if possible have storage capacity enough to let the year of plenty carry us over the year of shortage. With clover hay added to ensilage and corn, we are placed in possession of a variety and kind of feed that will place all farm animals in prime condition of health and thrift. The question should not be ensilage or clover, but ensilage and clover.

WASTE OF CORN CROP.

I have spoken against waste on the farm. It is now a pretty well settled fact, that of the total nourishment at one time represented in the corn plant only 60 per cent is utilized by confining ourselves to the ear and letting the stalk with its 40 per cent go to waste, like hay becoming over-ripe. This is a serious loss and would be amazing if presented to us in dollars and cents. The silo again comes in here as the quickest and speediest solution of this difficulty. The whole plant excepting the roots, when the corn is in the glazed or nearly matured condition, wanders into the pit in one-half inch pieces, again to come out tasting all alike—good, fed under cover in convenient distance to the cattle, no waste by leaching rains or bleaching suns, no moulding in the center of the shock, no refuse in the manger, beets and tassels, pith and corn all devoured with a keen appetite. Ensilage is the cheapest and most satisfactory feed on the farm. At the rate of twelve to twenty tons per acre of corn, one acre would keep a cow from 600 to 1,000 days, feeding forty pounds per day. The silo was long supposed to be only the dairyman's accessory for he more than any other realized the importance of succulent feed to keep his milk cows flush, but in recent years much light has been shed on the subject—by the tests at experiment stations, and it was found what would produce milk would also produce beef and gradually the silo is working its way into the corn belt region to help the western feeder to produce cheaper beef. From first a winter feed, it has next become a summer feed during grass shortage, and next an all-year-round feed. Hoard's Dairyman advocates the feeding of silage every day of the year. In the Dakotas, where the maturing of corn is an uncertain proposition, the silo can be made a saving factor, likewise in Kansas where a withering wind in August works havoc with a promising crop, there will be ample juice left in the stalks to make good silage for winter feed. The corn crop when frozen makes good silage if worked up immediately.

A PLEA FOR BOSSIE.

With dairy products high in price and ever tending higher, with future interurban facilities for quick transportation of dairy products to cities, with increased consumption corresponding to increased population, with the process of making milk flow an established success, there cannot be otherwise but a flattering future for the man that keeps milk cows. Bossie, who has been the steadfast friend and provider of man for centuries, has lost none of her prestige, and is as indispensable on a well regulated farm as she ever has been. All dairy sections whether on poor soil or rich, show signs of thrift and prosperity through the generosity of Bossie when she is cared for and held in high esteem. Give unto her and she will respond bountifully with the most wholesome fluid that was ever fed to man or beast. She will restore fertility to the soil and replenish the farmer's purse. She is an all-round, useful and indispensable creature in farm operations, and to attempt farming without her and her progeny would be a short sighted policy; would be soil robbery which leads to agricultural bankruptcy. Where ten cows or even less are kept the silo becomes a paying investment. A census taken in Fond du Lac county, Michigan, where milk was furnished a creamery, cows not fed on corn silage netted $21.02 per cow. In Wisconsin and Michigan the silo has come to be regarded as an absolute necessity for the dairy cow.

PROTEIN IN THE SILO.

I have stated that corn silage was not a perfectly balanced feed, being short in protein, the flesh former. How can we get succulent protein into the silo and secure the most perfect feed imaginable and make us still more independent of clover. Of all the legumes or nitrogenous plants the soy-bean which ranks with alfalfa in protein contents, is best adapted for cutting up with corn into the silo. It grows erect, yields about as much as corn, can be cut and bound with a corn binder and matures with corn. Hamphrey Jones of Indiana raises from 150 to 250 acres of soy-beans, the greater part of which is cut up with corn into the silo at the rate of one load of soy-beans to three of corn. This gentleman has tested no less than a dozen varieties of soy-beans and prefers the medium black as the best kind suited with corn silage. My own efforts with soy-beans have been disappointing, the first planting with the corn in the hill was too early a variety, maturing too far ahead of the corn. My second planting last year proved to be worthless seed and did not grow. This year I shall renew my attempts with several varieties of the late type. There is no question in my mind but what the silo will be a necessary adjunct in the future to every well-managed farm and once being established it might as well be filled with a wholesome, well balanced, delicious feed for the livestock.

ALFALFA ON EVERY IOWA FARM.

BY A. A. BURGER.

(In the Iowa Homestead.)

Alfalfa is grown in almost every county in Iowa. A small part of this must be considered as a failure; a part as a fair crop, and some of it as a splendid success. The average yield in 1909, was 2.85 tons per acre and in 1910, 2.7 tons per acre. Here is evidence enough at least that alfalfa can be grown successfully in every section of the state. But the failures which we have had, have led some to believe that alfalfa cannot be grown successfully in Iowa. In this connection it will be of interest to note that in the replies which are being received from farmers a great majority express the opinion that it can be grown upon their own farms. We have made a good beginning. Unquestionably there will still be many failures, but the time is not far distant when alfalfa will be grown successfully, permanently, and profitably upon every farm in the state wherever reasonable precautions are taken. Let us bear in mind that we are starting a plant with which we are unfamiliar and which is new to our soil.

Alfalfa is no more difficult to grow than clover. This is the opinion of the most eminent alfalfa authorities in the land. We forget that when clover was first introduced, it refused to grow. Many there were who declared that it never could be grown. It had its opponents then as alfalfa has its opponents now. But, in spite of its opponents, clover grew; it became our principal hay crop, the great source of nitrogen in maintaining our soil fertility. We are now learning to grow alfalfa. Experiments with clover and alfalfa side by side indicate that alfalfa has withstood the severe conditions of winter and spring of the last three years and the drouths of the last two years better than clover. Statistics gathered in Iowa show that in the last two years the failures of clover seeding have been more numerous than those of alfalfa. There are plenty of instances in the state where alfalfa has been sown in timothy meadows and each year for a number of years has become more vigorous and persistent. Give alfalfa a "square deal." Supply the conditions necessary to its growth and with a fair chance it will become one of our most prominent crops.

In the last two years, perhaps no crop has attracted so much attention as alfalfa. As an all around feed it has no equal. It contains over eleven pounds of protein in every 100 pounds of hay—it is almost as rich as bran. It ranks high in its fat content, and in addition contains more bone building material than any other feed grown on the farm. As an all around feed, rich in all the materials necessary to animal growth, it has no equal, while in its total yield of feed per acre we grow no crops which will compare with it. The average yield as reported by the various experiments stations in the corn belt is over five tons per acre. It is not unusual, however, to hear of a crop making five cuttings per year. Indeed, we may reasonably expect three.

Alfalfa is one of our best feeds. The Missouri Experiment Station produced 600 pounds of pork per acre and in addition received ninety-eight cents for every bushel of corn that was fed. Not including the corn fed, the alfalfa alone returned $36 on six cent pork. As a dairy feed, the dairymen already appreciate its value. Based on the cost of production a pound of protein grown in alfalfa costs only two cents; in cotton seed meal, the dairyman's cheapest concentrate, it would cost twice as much, in gluten feed and oil meal, about three times as much, and in bran even more. The average money value of the protein of each acre of alfalfa in 1909 and 1910 was $22.80, and $31.32 as compared with a value of $16.75, and $15.91 for winter wheat and $17.65 and $14.32 for corn. After deducting the cost of growing each crop the profit from the average acre of alfalfa in 1909 and '10 was $14.01 as compared with a net profit of but $3.17 for corn and $4.35 for winter wheat. Placing this on still another basis each acre of alfalfa has averaged a production of 2.16 times as much protein as red clover; 2.75 times as much as corn, and four times as much as oats. It is significant to note that out of 1,016 alfalfa seedings reported from several parts of the state, that only 12.7 per cent are classed as failures. At Ames sixteen seedings sown since 1904 have given an average yield of 4.38 tons of field cured hay. This is merely an indication of what might be done on any farm where it is properly handled.

Most of the alfalfa failures of Iowa have been due to improper methods of culture. This, not so much to the lack of knowledge of the requirements of the plant as to the lack of applying a few fundamental conditions which we know are necessary to its growth. Alfalfa is a new plant and there are many things concerning it which we still have to learn. But if we would apply the knowledge which we already have, simply do the best we know, the percentage of alfalfa failures would be much reduced. Some of our growers have failed in their first attempts and some fail repeatedly. It cannot be expected that all can be successful with it at once and under all conditions, or without thought or care.

Many cases of alfalfa failure have no doubt been due to the lack of inoculation. On sour soils, we may add to this the lack of the use of lime. Most of the successful fields are growing where alfalfa has been tried repeatedly, indicating where the methods of culture have been the same that inoculation is beneficial. Most of the unsuccessful fields of the state show a lack of nodules on the roots. On the other hand, in practically all of the successful fields the nodules are present in abundance. Alfalfa cannot live without the proper bacteria on its roots, and these bacteria cannot live in sour soil.

Late seeding has been an important factor as the cause of failure. In this case, the plants do not attain a sufficient growth to withstand the winter, more properly, the heaving and thawing action of the frosts of early spring. Very close pasturing, late pasturing or late cutting, subject the plants to the same results.

The influence of a poor seed bed is to be seen in many thin and weedy stands. The seed may not have germinated properly, due to the improper physical condition of the soil and perhaps to the lack of moisture which in too many cases can be traced to the same careless preparation. Oftentimes late crops, followed by prolonged drouths, make it impossible to prepare a satisfactory seed bed.

Blue grass and fox tail are among the worst enemies of alfalfa. Both can be best controlled by thorough cultivation, preparing the soil early in the season, and giving it frequent cultivation.

Other causes of failure are poor seed, poor soil and poor drainage. The best seed is none too good; poor soil may be improved by the liberal use of manure and wet land may be drained. But the best and safest method is to sow alfalfa only on soil in a high state of fertility on land which is thoroughly drained and on which the water will not stand while the ground is frozen. Alfalfa cannot stand wet feet or a smothered head.

At this season of the year the seed bed will need immediate attention. The land that has been selected for alfalfa this spring and on which no crop has been grown will be the most satisfactory, providing it has received frequent and thorough cultivations. Where some crop such as potatoes, early oats or barley is to be removed the soil should be disked well, then disked and harrowed into shape as soon as possible, plowed immediately, manured and, if necessary, limed; before it has lost its moisture and become cloddy. In the case of late oats, it may be necessary to cut a portion for hay. In this connection it is well to remember that at this season of the year the soil loses its moisture very rapidly, hence, immediate cultivation is necessary. To increase the chance of success it is well to begin with the first requirement—a good seed bed.

In obtaining seed deal with a reliable or reputable seed company. Oftentimes alfalfa seed is adulterated and contains objectionable weed seeds. As with any other crop, the best is generally the cheapest and it should be purchased only subject to inspection or where the purity and germination are known to be good. Arrangements to secure seed should be made at once. Delay may result in late seeding and possibly the loss of a crop.

*Alfalfa seed is usually sown at the rate of 20 pounds per acre. It may be drilled or broadcasted. Drilling is by far the best way of planting the seed since it means the more even distribution. However, if the seed is sown broadcast, it is well to cross the field twice, sowing half the amount in each direction. If there is plenty of moisture present the seed should not be covered to exceed half an inch. However, if there is not enough moisture present at this depth the seed should be covered deeper. If the seed is broadcasted the harrow will cover it deep enough.

The time to seed alfalfa will vary in different sections of the state. The experience of many growers in northern Iowa would indicate that alfalfa should not be sown later than the first week in August. For southern Iowa, the time may be extended ten days or two weeks. Later seedings usually do not obtain sufficient growth before frost to withstand the winter. There is no objection to sowing the seed earlier than the date mentioned, but to sow later is simply to take the chance of the possibility of a late season. Very frequently at this season of the year there is a lack of moisture. If the ground has been summer fallowed it should contain sufficient moisture to insure germination at any time and hence the advantage of this method.

Many soils of Iowa no doubt would be benefited by inoculation. In most of the fields so far examined there has been no evidence of the bacteria on the roots of the plant, and in most of these cases the bacteria have never been applied. In other cases, where the fields have been inoculated no doubt the bacteria were destroyed by the acidity of the soil. It must not be understood, however, that all fields need inoculation. But the essential thing to remember is that alfalfa will not succeed where its particular kind of bacteria are not found, and that these must either be naturally present in the soil or artificially applied. On some land inoculation may not be necessary, but why should we assume this risk when inoculation is so easily and cheaply accomplished. Alfalfa never has been grown by chance or guesswork. Inoculation is the cheap and safe way.

There are two methods of soil inoculation—one by the use of natural soil; the other, of artificial cultures. Soil can be obtained from a nearby alfalfa field where the plants have an abundance of tubercles on their roots. Three hundred pounds of soil to the acre evenly distributed will serve the purpose. Since the bacteria of alfalfa and sweet clover are similar, soil from the latter may be used. It can be applied by hand or with the seeder and should be sown preferably during the evening and harrowed in immediately, the object being to protect the bacteria from the direct rays of the sun which tend to destroy all bacterial life.

Within recent years artificial cultures have met with quite general success. Two of these cultures which have been most commonly used are Nitragin and Farmogerm. When these cultures are used, it is only necessary to treat the seed before sowing.

Alfalfa requires for its best growth a large amount of calcium, the active principle of lime. It also requires a soil in which there is lime enough to maintain bacterial life. There are no doubt many farms where lime would be beneficial. It must not be understood, however, that lime is a necessity on all farms. But with lime as cheap as it is, the best test is the use of lime itself, at least on a part of the alfalfa. Those who have any suspicion that the land is sour, may make the litmus paper test. Generally such weeds as horse-tail and sorrel indicate a sour condition of the soil. Lime may be applied at the rate of one or two tons per acre. This is not difficult to apply and is not expensive.

In all the experiments which have been conducted, the use of manure has shown marked results. Manure will be beneficial on practically all soils and especially on those which are light, those of a sandy character, and those lacking humus. Well rotted manure should be applied liberally and thoroughly worked into the soil before seeding. A second application of manure should be made in the fall after the plants have ceased their growth. Fields thus treated show a much more vigorous growth the next spring. Many alfalfa fields treated in this way have withstood the winter where the untreated portions were winter killed.

There is a common opinion in some localities that manure will correct the acidity and also serve to inoculate the soil. Unquestionably the use of manure is beneficial even on acid soil, but the acidity of such soils can be corrected only by the use of lime. In regard to inoculation, manure may carry the proper bacteria when produced from alfalfa or sweet clover roughage, but otherwise it could not be considered as an inoculating material.

Alfalfa sown at this season of the year will need no further care during the first fall. While there are some who have successfully pastured or mowed the first season crop during the fall, it is safest to leave a good growth on the ground. Many promising fields of alfalfa in this state were killed during the last winter, and in many cases where the crop was not sown late, this was caused by late pasturing or cutting.

There are a number of questions regarding alfalfa which every farmer must decide for himself. These include such questions as the selection and preparation of land where lime is necessary, drainage, etc. It is not necessary to say that the successful alfalfa grower will give heed to all the details of the business. He will avoid risk. There are a few precautions which should not be overlooked and they are here restated that they may be more fully understood: First, alfalfa will not grow on wet or undrained land; second, alfalfa should not be sown on acid or sour land unless some form of lime has been applied; third, alfalfa land should be well manured; fourth, alfalfa fields to be most successful should be inoculated; fifth, alfalfa requires a carefully prepared seed bed; sixth, alfalfa should not be sown later than the first week in August in the northern part of the state, nor later than the middle of August in the southern part of the state. Only good seed should be used; seventh, prepare the ground now, and secure the seed early; eighth, don't start on a big scale—an acre or two will be sufficient. Sow a little. Start now.

WEEDS.

PROF. L. H. PAMMEL, IOWA STATE COLLEGE.

(Read before the Delaware County Farmers Institute, Manchester, Iowa.)

The subject of weeds is one of vital importance to the farmers of Iowa. Weeds do an enormous damage to the crops of Iowa. A conservative estimate places the injury at $25,000,000 annually. This loss could be largely avoided if we had more concise information on the subject, and if we could conserve the matchless resources of our soil by keeping the weeds down, the farmers would be greatly benefited in a financial way. Now let us add to the injury from weeds the damage from fungus diseases. A single disease, oats smut, causes a loss of $6,000,000 annually alone in this state. Some one has estimated that the loss from fungus diseases in the United States, is not far from $250,000,000. Now add the loss from the depredations of insects at $750,000,000 annually and we have a tremendous loss to the farmers and horticulturists of the United States. In many cases as in oats smut this loss can be avoided if the farmer would only treat his oats seed with formalin. In this connection, permit me to call attention to a bulletin on treatment of fungus diseases, published by the Iowa Agricultural Experiment Station. This and other bulletins may be obtained by writing Prof. C. F. Curtiss, Ames.

A weed may be defined as a plant out of place or a plant that is injurious to agriculture, horticulture, growing where it is a detriment to the crop. Weeds are injurious because, 1. They crowd out the growing crop. 2. They consume the moisture necessary for a crop. 3. They consume the mineral or other food elements essential to a crop. 4. They pull down the crop. 5. They are injurious because the seeds are difficult to remove. 6. They are injurious because they harbor insects. 7. They are injurious because they harbor parasitic fungi. 8. They prevent the proper cultivation of the soil. 9. They may cause conditions which breed disease. 10. They may poison the soil. 11. They stop drains. 12. They poison animal and man.

The matter of good seed is of great importance to the farmers of Iowa. Let me call your attention to some of the bad weeds which have been introduced with clover and alfalfa seed. One farmer a few years ago sent me thirty-five different weeds he thought were introduced with clover. Some were common in his vicinity. Some, however, like the wild carrot, buckhorn, chicory, poison hemlock, dodder and Canada thistle were introduced with clover seed. We have a fairly good seed law in Iowa and I am glad to say that the seed merchants are trying to comply with the law. I would advise, however, that the farmers send an ounce or more of the seed to me for analysis. This will enable you to buy only good seed *and the farmers are now demanding the best seed.* It is far better to use the best seed than to buy cheap seed that contains bad weed seeds and is low in vitality. Certain weed seeds are prohibited in the Iowa seed law, like Canada thistle, quack grass, mustard, dodder, etc. Are we not paying the penalty for the weediness of our fields? Some of the weed seeds keep their vitality for a long period of time. Thus some of the seeds of velvet weed retain their vitality for more than half a century. The seed of shoofly likewise retains its vitality for a long time.

Weeds may be classified as annual, biennial, perennial and winter annual.

First, annual weeds, represented by foxtail. Their seeds germinate in the spring, flower, produce seeds and then die. Their roots are fibrous, and are usually easily killed by exposure to the sun in ordinary methods of cultivation. In some few cases, as in crabgrass, roots are produced from the joints where such weeds lie on the ground.

Second, biennial weeds. Their seeds germinate one season and produce a mat of leaves, pass through the winter, and the next season send up a stem which bears flowers and seeds, and then dies. Such weeds should be cut off several inches below the surface of the ground. This should be done the first season, or before the plant has produced seed. Never cut them off at the surface of the ground. If so treated they act like perennials. Weeds of this class are represented by burdock and parsnip.

Third, perennials. This class of weeds is represented by Canada thistle, quack grass, dock, and sheep sorrel. They continue to grow year after year.

Fourth, winter annuals. The seeds germinate in the fall, pass through the winter, flower and seed early next season. Wild barley or squirrel tail, horse weeds are types of winter annuals.

The following rules may be laid down for the extermination of weeds:

GENERAL RULES TO BE OBSERVED.

1. Prevent the Formation of Seeds. This applies to all kinds of weeds. Many seeds of weeds like foxtail, and other weeds of the grass family, do not retain their vitality very long. Some, however, like shoofly, velvet-leaf or butter print, retain their vitality for a long period of years. It is essential that no seeds be allowed to form because a continuous crop of weeds will appear when the soil is brought under cultivation.

2. Always Buy the Best Seed. See that such weed seeds as dodder, buckhorn, dock, Canada thistle, chicory, carrot, and other weeds are not sown with clover and other seeds.

3. Rotation of Crops Is Important. First, because the conservation of the soil, second, to destroy insects. Many of the insects cannot be destroyed in any other way. Third, to destroy fungus diseases (smut of oats and corn are caused by parasitic fungi.) These root parasites of the fungus type cannot be prevented in any other way. Many of these occur on the roots of cultivated plants. Many weeds are found in special crops. In this rotation clover should occur, because a thickly grown clover crop crowds out weeds. A pasture, in many cases, is good to reduce the number of weeds.

4. *Use Due Care With the Threshing Machine.* See that the machine is always cleaned when passing from one farm to another. Quack grass, mustard seeds are often carried from one farm to another.

5. *Use care in transplanting hay,* grain straw and manure from one farm to another, or from the city to the farm. Quack grass and other weeds are frequently carried in this way.

6. *Utilize sheep* for the destruction of weeds.

7. *Use some vigorous and thick growing crop* to crowd out weeds. For this purpose sorghum, clover, or millet is good.

8. *Give thorough and clean cultivation for corn.* Cultivate as long as the corn crop will permit.

9. *As far as possible plow small grain crops and corn fields in the fall.* This will destroy many annuals whose seeds germinate in the fall; especially valuable for winter annuals like shepherd's purse and peppergrass.

10. *Use iron sulphate* for annual weeds like mustard, ragweed and smartweed.

11. *See that all weeds in waste places are removed.* This will prevent their spread to cultivated fields.

The unlawful weeds of Iowa are quackgrass, Canada thistle, cocklebur, wild mustard, curled dock, smooth dock, buckhorn, wild parsnip, horse nettle, velvet-weed, and burdock.

In this connection permit me to call your attention to a circular, "Unlawful Weeds of Iowa," which you may obtain by writing to Prof. C. F. Custiss, Ames, Ia.

HOW THE ANGUS STEERS ARE HANDLED AT THE COLLEGE FARM.

BY W. H. PEW, IOWA STATE COLLEGE.

(Before Annual Meeting of Iowa Aberdeen Angus Cattle Breeders' Association.)

Members of the Iowa Aberdeen Angus Breeders' Association:

Just at this time of year you are no doubt questioning yourself and others as well as to what this year is going to bring in the way of sales of purebred livestock of your particular breed. I think you should be congratulated that you have a purebred herd gathered together. I am of the opinion that this year will bring an unprecedented demand for pure-bred bulls and breeding stock of all ages.

There seems to be a stimulated interest on the part of the farmers all over the state to grow more beef. This is really the best sign. Besides the interest in growing more beef, manifested in this state other states, particularly in the south, are just beginning to realize their possibilities in the growing of beef.

Before getting into my subject, and by way of introduction, I wish to say that I consider the best means of advertisement of one's herd is that of growing steers and exhibiting them. The ultimate end of the breeding business is the block. By feeding out steers one shows the possibilities of his herd without injury to breeding stock. I would like to see more of our breeders exhibiting a few steers. I would like to see our Fair Associations extend their premium lists and offer more liberal prizes for steers. Just here let me add that I am in favor of advocating the elimination of the two-year-old steer from exhibition and laying more emphasis on the yearling and calf classes. I may have some opposition in this opinion, but if our exhibitions are to be of value, they must show what we must breed for and keep in mind at all times the profitable animals. I do not believe the time is far off when our fairs and international expositions will adopt this policy.

Bull calves that are to be steered are castrated at about four months of age; as a matter of fact the earlier they are castrated the more refined they will be in appearance about the head and neck. Then, too, another advantage is that no set-back will be encountered. A heavy milking dam is desired because a good start is absolutely essential. The calf is permitted to run with his mother as long as is convenient. I am of the opinion that he does better if permitted to nurse as he wishes. However, the matter of convenience of handling the cows enters into the question of length of time he can be with the cow all of the time.

As soon as the calf is old enough to begin to look for grain he is given whole corn and oats. After a few months' time he is given a grain mixture, preferably composed of cracked corn, ground oats and bran in about equal parts by measure, with about 10 per cent of oil meal by weight. This is fed according to his appetite. We think a good quality of clover or alfalfa hay is the best roughage to be allowed at all times. A word of caution should be given in feeding alfalfa—unless calves are used to it, care should be exercised in feeding it as sometimes it has a tendency to scour the young calves. If the calf is fall born, through the winter he is given some corn silage through the day as he desires to eat it. The ration given is one that will insure growth and development and should put on all the fat required. If the calf is spring born and intended for fall show, he is handled in very much the same way except that after grass comes through, at night he may be put on pasture and kept in during the day. As a rule the senior calves are weaned soon after the International.

For the older steers, during the winter time the problem is to get as much growth as possible and keep increasing the fat, but not sufficiently so that he will become rough. A grain ration composed of about equal parts of corn, oats and bran and about 10 per cent of oil meal is given morning and evening. Hay, of course, is given as they wish it. Early in the morning all steers are turned out in the yard for exercise and water. About 11 o'clock they are turned into another yard where there are feed bunks filled with silage enough to keep them eating for about an hour. Between 2 and 3 o'clock in the afternoon they are all put back into the stable where two steers occupy one box stall. Here they will rest until about 5 o'clock when they are fed their evening ration of grain. Hay is before them so they can eat as they wish.

As the pasture season comes in the spring, the silage is taken away from them and they are on pasture day and night, coming to the stable in the morning and evening for their grain. Of course they are turned onto pasture gradually and with hay in them to prevent scouring. As a rule the gains will be somewhat reduced, although not for a great length of time.

As fly season and extreme hot weather approaches they are kept inside during the day time and out on pasture at night. This program is followed until fall, when the heavy frosts come, then they are kept off pasture altogether, as the grass they consume then has a tendency to scour. When the cooler weather of fall approaches the grain ration is increased in amount as the appetites demand. After taking off pasture the grain mixture is either mixed with the new corn silage or sliced roots. This affords some bulk and sufficient succulence to keep the digestive system in good condition. About the time new corn comes in September, some is chopped and given the steers daily; this is sometimes mixed in the grain ration and sometimes fed in the stock, however, just in sufficient amounts to make a variety. About the middle of October to the first of November boiled feed is given. At this time barley is substituted for corn and usually some wheat is added. Barley, wheat and whole oats are boiled together, then when fed are mixed with bran and what sliced roots or corn silage are given. Oftentimes it is desirable and found advantageous to sprinkle the feed with molasses.

The question of milk is oftentimes discussed. If the calves are to be made the best, they must have about all they will take. If a yearling is still nursing, he will be the better for it.

Another factor which enters into the life of the college steer is that of the students' judging. The cattle are here primarily for the purpose of the students' judging work. Our judging work is carried on mostly from the first week in September until about the tenth of November. During this time every steer is in the class room five days in the week for an average of two hours per day. Last fall the college steers were handled by about 800 students every week for the period mentioned. Besides the fall judging they are used by the summer school students from about the fifteenth of June to the middle of July for their judging work. While the steers are putting on fat they are paying for their keep in an educational way.

WILL FREE TRADE IN MEATS AND GRAIN AFFECT PURE BRED CATTLE BUSINESS?

BY C. J. MARTIN, CHURDAN.

(Before Annual Meeting of Iowa Aberdeen Angus Cattle Breeders' Association.)

During the first forty or forty-five years of my life, I spent a vain endeavor trying to make myself believe that a tariff on all articles that the American people produce and consume was a mighty good thing for the public to be afflicted with, and I even worked myself up to believe that the higher the tax the greater the prosperity that would surely come to the American people, for I had even worried myself into a condition where I thought that taxes and prosperity go hand in hand.

I must confess during late years I have grown a little skeptical about this combination of high taxes and prosperity business, for during the last forty-five years of my life I have lived under a high protective tariff, in many instances a prohibitive tax. I have seen a large part of the material wealth of this country drift into hands of a very few men, whose interests have been protected under these protective laws of this country; and, professing a love and veneration for my country, I have had to modify my views as to just who a high protective tariff, as we had under the past tariff law, benefits. It is commencing to dawn upon me that if the flow of wealth in this country continued to flow on during the next forty years as it has during the past forty years under a protective tariff, into the pockets of these few men and the interests they represent, that before another forty years had expired these few men and their interests would own nearly all of the material wealth of this country, and if this was true, and I hope to prove it largely before I am done, that possibly a patriotic view of our duties as American citizens would prompt us as producers and breeders of cattle that we meet free trade in cattle and grains, as all patriotic Americans do in a crisis in our country's history and sacrifice a little for the general good and for all humanity in general.

But as breeders and producers of cattle we are and have been constantly reminded that we have shared in the general prosperity that has been abroad throughout the grain belt as never before under this protective tariff, and why should we care if these few men and their interests have accumulated vast estates. But, breeders, we cannot escape responsibility so easily as it should interest every patriot who loves his country and who can rise above the sordid life of just living for the purpose of making and squeezing out of our surroundings in life all that we possibly can, and then dying, as we all must in a few years, leaving a large property to be spent by some one who will come after us for wealth that we do not spend before we die, is only good for what it will purchase, and the ones who have the spending of our fortunes after we are gone will be interested in seeing what it will buy quickly. There is a vast army of the "idle rich" making its appearance in American life.

We all know there is only so much property and money in the world, and if we allow those few men and their interests to secure such a large part of the material wealth of the country as they have acquired under a high tariff, that it only deprives some other poor fellow perhaps more deserving than we or they from getting his just share, and I hope to show you before I am through that the building of these large fortunes and estates that has been going on in this country during the past forty years under a protective tariff, is not only a detriment to our country, but a positive menace to your and my welfare, for it has taken the major part of the material wealth of this country to build these fortunes for these few men and their interests, and in so doing has reduced thousands and thousands of good American people to want and beggary, While it is true that we have prospered here in the grain belt under a protective tariff, little of this prosperity came from the cattle business, either as breeders or producers. We as producers have had to deal with one of these "interests" that has grown rich under a tariff, known as the packing interests, and they appear to have an unsatisfied appetite for all the profits from the entire cattle business in this country, and we are now under free trade in meats. We see them reaching out for more worlds to conquer, in Africa, Mexico and South America.

Now, breeders, don't form the opinion that I have become a socialist or even a pessimist, for what I have already said and am about to say. I want first to refer you to a congressional report published a little over a year ago in proof of what I say, for if you will examine this report, you will find that over 36 per cent of all the active wealth of America is now in the absolute control of just two men, and these two men with their allied interests and with their interlocking directorates, in the past have been able to dominate corporations in which they are interested, that by their manipulation and at their command, property values go up or down, and fortunes are made or ruined to suit their whims and caprices.

It seems staggering, but it is none the less true, for this same report shows that these two men control the inconceivable amount of wealth of nearly or quite $40,000,000,000, and that in the control of this inconceivable amount of the material wealth of this country they are in a position to practically enslave the other one hundred million of the inhabitants of our once glorious country for any business that they wish to acquire or demolish. They have but to withhold the necessary credit that it requires at times to conduct the business of the concern and the business is demolished and destitution and want follow in the wake of such action, but the flow of wealth continues into these multi-millionaires' pockets.

These two billionaires of course live in the city of New York, for no city within the grain belt would tolerate them and statistics show that over one-third of all the inhabitants of that city are forced to receive charity at some time in their lives and that one out of every ten in that city is buried in a pauper's grave; that in this great city year before last over 8,000 little children starved to death for want of food, and that over 6,000 people froze to death in that city year before last for want of fuel to keep them warm, and that 360,000 people live in that city in cellars and basements in which the rays of the sun never penetrate. So in discussing this situation, I want you to pardon me if I ask you as producers of cattle and breeders to take a larger view of life than just the accumulating of immediate money, for I must remind you that our duties to the public good and humanity in general must point to a great wrong that has been committed upon the American people in the distribution of this wealth that has come to us during the past forty years under a protective tariff, that would permit 8,000 children to starve to death in one year in one city alone, where in this land of plenty so many of our food products went to waste, as we were told by these interests for the want of a market—to be exact in the words of the meat packers when they force down the price of cattle on foot, "there is no demand for the meat," and 8,000 children starving at the same time in one city.

I do not believe it is from the want of general prosperity we are suffering as much as it is the unequal distribution of the wealth under a period of a protective tariff, for we all know that it takes the great wealth of these two billionaires in the city of New York to equalize the poverty of the other four million of its people.

The interests these two billionaires control have built up large cities remote from the point where these food products are produced, making the cost of all food products so high before they reach the point of consumption that it has brought about this unnatural condition of affairs that has permitted a part of our population to starve, for before any of these natural foods can be consumed, including our meat products, they must go through the hands of tradesmen, brokers and countless middlemen, thereby doubling and in many cases trebling the cost that the producer gets for it before it reaches the consumer, and every one of the interests levy tribute upon each article consumed in this way before it reaches the consumer, and the agent and representatives of all these interests are all located in the congested centers of population to see that the "last pound of flesh" is taken, and the meat packers represent one of the spokes in the wheel of these billionaires.

Here in Iowa we cannot burn much Iowa coal, because we have been taught that Illinois, Indiana, Ohio and other eastern coal is so much better for us, in fact the farther away it is located the better it is for us to use, for these interests and the railroads get to make a long haul and the same long haul on all our foodstuffs that the miner consumes in a distant state. Even our meats or nearly all of them must be sent out of the state to be slaughtered, and then reshipped back to us to eat, and our food products that we raise in Iowa, or nearly all, are shipped to a distant state to feed their laboring men that work in these factories which the interests have located without our state, so that the cost of living may be maintained upon its present high level.

The idea of these interests seems to be that nothing must be consumed at the point of production for if it were the cost of living would be reduced and these interests who own and control our railroads have permitted the building of no large cities in Iowa as we all know who have given this matter any thought, that it is the railroads that either build or permit of them being built, and for that reason little or no manufacturing has been permitted in Iowa, for we have been taught by these interests that Iowa was only an agricultural state, when as a matter of fact old Iowa wastes enough every year in her fields, gardens and orchards to not only clothe, but amply feed and keep those 8,000 little children from starving and freezing every year in the city of New York, if we were only permitted to do it, or if conditions were such that we could get at them to do it, and we would do it any way, if we are not living under a false economical system that robs the majority of the people for the benefit of a few, under a protective tariff, and for the sake of these interests taking their profits from our labors here in the grain belt, these little children are permitted to starve and freeze each year so that the flow of wealth of this country into their pockets be not interrupted.

To illustrate, I want to give you but one instance of the cost of high living that has been forced onto the American people by these interests by each of the middlemen adding their living and profit to an article before it reaches the point of consumption. I have seen peaches rotting on the ground by the thousands of bushels in northern Missouri and southern Iowa for the want of a market, and offered at 10 cents a bushel at the orchard with no purchaser, and finally hogs turned in to consume them for the want of a better outlet, when upon the same day in the city of Des Moines, less than 125 miles from these orchards, peaches of the same quality were selling for $3.00 per bushel in order that the high cost of living be maintained at its high level. Now what is true of peaches is true of every one of the foodstuffs raised upon our farms, including the meats that our black beauties produce.

As it can be seen under our economic system, everything flows from the farm to the city, and then what little is left over, after all the interests and middlemen have taken what they deem is their share, is permitted to come back to the producers on the farm. Even the money and our credits flow to the city, where it is used by these interests, many times in speculative ways, and many of our large city banks have merely become the agents and representatives of these billionaires and their interests, and instead of doing a legitimate banking business of loaning money and extending credit for business purposes, have gone into the underwriting business, where instead of getting an interest on their money, they exact in many cases a large part of the principal as well.

I know these are harsh words to utter, but I have been in the banking business in the county where I reside nearly twenty-five years, and have seen one of the most illogical systems of currency and credits in use during that time and when a change was proposed recently by Congress toward introducing a better balanced financial system, these unpatriotic billionaires and their interests have predicted ruin and want throughout our county for fear that the channels of some of their profits they have been exacting from the American people may become stopped up thereby. I am sure that no system could be devised by man that would be more illogical and prejudicial to the common mass of the American people than the system we have been operating under the past forty years, and I say this as one of the many business men who did not support the candidacy of Wilson for president, nor am I a supporter of his administration at the present time, but I want to give him credit for trying to do something to better the condition of the common mass of the American people.

Under free trade in meats and grains, I do not see as the producers of meats are any worse off than the producers of all the other natural products of the farm that go to feed and clothe the human race, for each article is controlled by a trust or corporation that radiates to the center of the hub occupied so long by these billionaires and their interests as it has been arranged for a long time that the meat trust and the packers should control the producers of meats, that the cotton producer in the south must deal with the cotton trust or the cotton exchange, the tobacco producer with the tobacco trust, the grain producer with the Board of Trade and their allied interests, the producers of fruit with the different fruit exchanges or the fruit trust, and so on through all the natural products of our farms.

There seems to be a growing disposition in the minds of the American people with the exception of the actual producers of cattle that the price of all kinds of beef is too high, and the American people have been assisted in the cultivation of this belief by the packers so that they could keep the price paid to the actual producers of cattle down to the actual costs of production or in many instances below the cost of production, that in maintaining the high price paid by the consumers of these meats it permitted the packers and their interests to pocket more profits off the industry, and although it seems to make little or no difference whether the price of cattle on foot goes up or down, the price of these meats to the consumer goes to a higher and higher level year after year, until they have reached a price that the man of moderate means cannot afford to use them, and meat has gone into the luxury class and their uses are restricted.

Any one who has given the production of cattle here in the grain belt any thought or investigation knows that in the production of cattle during the past few years, since meats reached the high level of prices, there has been little or no profit to the man who has been trying to produce cattle for market. In fact my observation and experience from a life spent among cattle, is that over one-half of the meat sold for slaughter from the grain belt during the past five years to the packer has been sold at a loss, yet we see the packers' estates grow larger and larger each year as we are told by him that there is no market for our beef.

If the grower could get three-fourths of the price after the actual expense of slaughter is taken out for his beef that is sold to the consumer, under the present high prices it sure would be a profitable business, and farmers would be seeking our purebred cattle to start in this business, but under the system the producers of cattle are forced to operate by the packer and his allied interests, all our profits go to build up large estates for the packers and yet the producers of meats are blamed for the high price of meats and a way was sought by the framers of our last tariff act that would reduce the price of meats, but the retailer who furnishes my family with meat, and who is a representative of these packers and their interests, charges me the same old price he did before the act was passed by Congress, while the price of beef on foot has been lowered, and I am naturally interested to know where this additional profit has gone since this tariff act was passed.

During the past twenty years we have witnessed the destruction of the cattle business within the grain belt, while the price of meats has worked higher and higher year by year, and under the present tariff act we have seen our meats replaced with the cheaper meats of South America and Old Mexico, and these same cheaper meats in the hands of these packers that destroyed the cattle business within the grain belt. They have given us free grains, I think for the sole purpose of afflicting the grain farmer with us so that he can suffer with us, as we are told misery loves company.

Breeders of purebred cattle, we are interested in this meat situation, for if there is little or no prosperity in the production of cattle for meat purposes, there will be little permanent prosperity in our business, and while I think the breeding of purebred cattle, especially the Aberdeen-Angus, looks the most encouraging it has since I started in the business, if the producers of meat on the farms suffer we are going to suffer with them, and free trade in and lower prices for grains will not add to our prosperity as the framers of our present tariff act seemed to reason, but before it can affect our business in breeding cattle it must lower the price of meats on the block to the general consumer, and packers are loathe to do this, and if they do not, I cannot see how it will hurt our business any more than it was before the present tariff act was passed. Anyway, it will not affect it any more than it has already, for the business has adjusted itself to the conditions of the new tariff act already.

I am going to take this view of it and go forward with renewed purpose to breed and keep some of these black beauties on my farm and the herd up to a high standard, so that I can turn my farm over to my posterity full restored to its virgin fertility and conserved for future generations.

One of the most hopeful signs of the times for the cattle business is the lust for land on the part of the American people which has led them to invade the big cattle ranches in the West and Southwest during the past ten years, where we have seen these ranches cut into farms and the big cattle outfits forced out of business, and if the American people are to conserve their vital energies and continue to be a force in the civilized world, they must eat meat. This meat must be produced somewhere, and there is no better place to do it than within the corn belt where the feeds are made that make and produce the primest beef known to the trade. You all know that we have the ideal breed of cattle for the corn belt farmer to produce, where the minimum amount of feed will ripen our cattle into baby beef at from ten to eighteen months old that is so much sought after by the packer and retailer, as the Angus carcass gives the largest per cent of edible meat with the least possible waste.

The cotton and sugar producer and farmer in the south who has been forced to dispose of his crop to each of the great trusts that control their product, each of which has been heavily protected for years by our tariff laws, find their business at low ebb for the continued production of each has impoverished their lands, and many, many acres throughout the

South have been abandoned as unprofitable to cultivate longer in either of these crops. These planters in the South are casting about for something that will not only restore their lands but their purses as well.

These abandoned lands of the South produce an excellent pasturage grass that grows and fattens a good grade of beef, and while in the past the tick fever retarded the cattle business in the South, each year lately has seen the tick brought more under subjugation. The reports we have from our breed of cattle that have been taken down into this land of ticks is most gratifying to the breeders of our breed of cattle, as the natural grasses on these abandoned lands of the south with the waste products of their cotton gins make a prime grade of beef.

While we are not getting the prices on paper for our cattle that some of the other breeds appear to be getting for theirs, the price that we are receiving for ours at the present time is profitable none the less to the grower and the new men who are buying them are settling for them in cash.

There seems to be a demand for more cattle of our breed than we are able to produce at this time, and the past two years has seen a wonderful accession to our ranks of new men starting in the business so that there is nothing in the situation, except possibly the depravity of the packer, to deprive the grower of cattle out of the profits, that would lead me to believe but what our breed of cattle at least is entering upon one of the brightest eras in its history. Should the packer interfere with our business, as he has in the past, let us hope that out of the situation some way will be devised by which these packers and their interests will be brought under the control of the American people.

I believe that the American people have passed by the era of cheap meats or cheap cattle either, that in the end we will adjust our business to free trade in meats and grains as well, and that we are going to have one of the most profitable periods in our business that purebred cattle breeders have experienced during the past ten or a dozen years, and that it will come to us under the present tariff act, not by virtue of the act alone, but in spite of it.

BETTER CO-OPERATION BETWEEN FARMER AND MERCHANT.

BY J. A. WILSON.

(Read Before the Linn County Farmers' Institute.)

We hear much today of co-operation. We have co-operative banks, stores, grain elevators, lumber yards and various industries conducted on the co-operation plan.

There are those who profess to believe that co-operation could be made a panacea for all our social and economic ills. We believe that it is possible to over-estimate the benefits to be derived by co-operation, as well as to fail to appreciate the need of some concerted action by those pursuing different occupations, whereby they can render assistance to each other and to the general public. Co-operation can never become a reality by two opposing forces, when the success of one, necessarily, means the failure of the other. It can become a reality only when the interests of both are mutual, and the success of one would contribute to the advancement of the other.

Co-operation can accomplish three things. First, banish antagonism, second, eliminate inequalities, and third, bring about concerted action. We have chosen in this paper to call special attention (with some variations and digressions) to the need of better co-operation by the farmer and the merchant. In using the town merchant, we desire to be understood as meaning more particularly the retail merchant, as he is next to the consumer, and we believe he is necessary for the convenience of the farmer, as well as the public. In the absence of co-operation we find existing between the farmer and merchant, differences, misunderstandings and in some localities, real antagonism. But in this respect we take pleasure in stating that here in Marion the relations of the farmer and the merchant are very cordial. In order that all may see and fully realize the need of co-operation by the merchant and farmer, we shall first state the contentions of the merchant. His contention is that the farmer is doing an injustice to him and to the community by purchasing goods from mail order houses, and other firms some distance away, as those firms pay no local taxes and do not contribute to the upbuilding of the local community, while the merchant is a taxpayer in the local community, buys the farmer's products and extends credit to him when he needs it, and therefore, according to every rule of justice, he is entitled to all of the farmer's trade.

The farmer's contention is that it is only a business principle, and borrowed from the merchant, to buy where you can buy the cheapest and sell where you can get the most. That the merchant very often sends away for goods he could buy of the local manufacturer, that he has farm products shipped in from other states when he might have purchased them of the local farmer; that in other words he doesn't practice what he preaches. The farmer further contends that tne cost of delivering goods in the city is added to the price of the goods and he pays the same price for the goods undelivered that city people pay and have them delivered at their door. To illustrate: The merchants of Marion by a co-operative plan pay $470 per month or $5,640 per year to have the goods they sell to the people of Marion delivered. It is conceded that the farmer's trade in Marion is equal to the trade of the people of the city, therefore the farmers in the vicinity of Marion pay $2,820 annually for the delivering of goods to the people in Marion for which he receives absolutely nothing in return. What is true of Marion in this respect is true of every city in this country.

The farmers are not asking that the merchants make a less price on goods to them, but we would like the people of the city to appreciate that the cost of this luxury they enjoy is partly borne by the farmer. We want to serve notice on the merchant and the business men of the city that when they become members of an organization that binds its members to only purchase goods away from home when they cannot be obtained at home, we are willing to join with them and boost for the advancement of home products. It is the belief of the farmer that by co-operation these differences can be in a measure at least adjusted to the satisfaction of farmer and merchant, and every one concerned. There are many problems pressing for solution that we cannot discuss at this time, but we shall mention very briefly a few that we believe could be solved by co-operation between the farmer and the merchant.

The standardization of farm products, not only the staple products, but all farm products, including fruit, butter and eggs. We deplore the practice of the local merchant in paying the same price for inferior products that he does for the best, as he does with both butter and eggs. Brother merchant, you owe it to yourself, to the producer and to the consumer to discontinue this practice. Better system for marketing farm products. Honest advertising. This is very important to the farmer, as he is often induced to go some distance, only to find the advertisement misleading and dishonest. Granting franchises by the city that concern the farmer, such as the telephone franchises. Equalizing taxes, so that farm and city property shall each bear their just proportion of the taxes. The elimination of all unnecessary middlemen. Certainly the retail merchant is in the best position to start this movement, by purchasing his goods direct from the producer and the manufacturer. With all due respect for their loyalty to the best interests of the city as they saw it, we regret very much the action of the commercial clubs of many cities in recent years opposing legislation very much needed, and designed for the betterment of rural life and the farmer. We think these clubs took a very selfish and narrow view of the situation, when they failed to appreciate the fact that "Rural Free Delivery" and "Parcels Post" in bettering rural life and the farmer, would also help the city. For whatever assists rural life, also helps build the city, and anything that improves the city, its effects are felt by the farmer. Our interests are mutual.

We sincerely hope these clubs repent of their wrong doing of the past and will sin no more. And if the farmer has been guilty of opposing anything that would have been for the betterment of the city, let him also cease from evil and do good. Let us have peace. We have called attention to these things, not with the spirit of complaint or fault-finding, but with the best interest of all in view, hoping to see a satisfactory adjustment by co-operation.

It is our hope that in the future the cities and the farmers may forget selfish interests, and unite in one supreme effort for the betterment of every citizen of the nation in the world. Let us have better co-operation.

WINTER HANDLING OF BREEDING EWES.

BY HERMAN STEEN.

(In Farmer and Breeder.)

The shepherd's harvest, like other harvests, comes to pass in the summer and the autumn; his seed time, unlike other seed times, comes not in the spring, but in the winter when the snows cover the earth and while the thermometer hovers around zero.

The question of handling the breeding flock during the winter is one which does not assume much importance until about New Year's. Before that time there is usually not enough snow to interfere seriously with the daily ranging of the flock. When heavy snows fall and winter deepens, and the time for lambing coming nearer every day, the shepherd must needs give his flock of ewes closer attention. Care given the flock in the winter time will manifest itself when the lambs are sold the following fall.

The four things necessary to bring the flock through the winter are exercise, shelter, feed and water. Exercise, though not often emphasized, is important. It keeps the ewe in good, healthy condition, and prevents sluggishness and constipation. Strong lambs are born to ewes which have been compelled to rustle more or less through the winter. As long as the winter remains open, there is little danger of securing insufficient exercise. When the snows fall and the flock is shut in the lot or the barnyard, trouble is apt to ensue. If the ewes fail to obtain exercise in any other way they may be driven around a little each day. In any event, the run of the fields should be open to them at all times.

The question of shelter with sheep is not so difficult as with other animals. It has been said that, if given a shed sufficient to keep out the snow and cold winds, the flock will need nothing better. This is not far from the truth. Many successful sheepmen, even as far north as Wisconsin, keep their flocks in three-sided sheds open to the south or southeast. Sometimes, however, we have cold southeast winds in the winter, and open sheds are of little value under such conditions. The main things to be kept in mind are warmth, cleanliness, ventilation and dryness. An ordinary shed well protected from the cold winds will suffice. By banking the north and east sides, especially, it may be rendered fairly wind-proof. At the same time ventilation must not be forgotten. This is usually accomplished by a large door on the south end of the building kept open except in extremely cold or windy weather. This will provide for the escape of most of the odors common to the sheep barn. A door in the opposite end of the building opened for a time during the day will aid greatly in ventilation.

Dryness is an essential which must not be overlooked. Sheep cannot do well in a damp place, especially in winter. If dryness can be brought about in no other way, it may be accomplished by using plenty of bedding. Shredded corn fodder is preferable to straw as it does not stick to the wool. Straw with beards should not be used under any circumstances as the market discriminates severely against strawy wool. Usually, if kept dry and warm, the shed will be clean. By bedding down the shed at intervals of a few days, the sheep are kept out of the manure. At the same time the manure is in good shape for handling. The item of cleanliness is of most importance at lambing time.

The breeding ewe must be fed for the development of bone and muscle, hence feeds fairly rich in protein are essential. Of these, clover and alfalfa stand out pre-eminent. Sheep like them and do well on them, and they are considered the best of all sheep feeds. Sheaf oats are fed quite extensively in some sections, and many sheepmen would not winter sheep without them. Mixed hay and corn stover are good feeds. Corn silage is a good feed, especially toward spring as its succulence helps to maintain the milk flow. Sour silage must be strictly avoided, however. As to the concentrates to be fed, much depends on the price. Home grown feeds can supply most, if not all, of this part of the ration. When clover or alfalfa is fed, just enough corn in connection with it to keep the flock in good condition makes a good practical ration. If some other roughage is used, the addition of oil meal is quite generally advised. Here, as elsewhere, it is found that variety adds to the efficiency of the ration.

Strange as it may seem, not all farmers appreciate the importance of water for sheep in the winter. There is a prevalent idea that a sheep needs no water except that which may be obtained from snow. This is entirely erroneous, and cruel to the sheep as well. When a flock maintained under such conditions is given access to water, they drink very greedily. If the flock does not have constant access to pure water, they should be watered once or twice daily. Sheep are very dainty animals, and rather than drink foul water, they will go thirsty.

The lambs should begin coming by the middle of February in this latitude, provided the proper accommodations are available. By early lambing a crop of lambs is secured for the high markets of June and July. Of course it would be foolish for the farmer with scanty housing to attempt to raise February lambs, for then he would only be inviting failure.

As lambing time approaches, the sheep should be carefully watched. The shepherd should be on hand an hour or two to see that the little fellow is all right, and the milk has started. A few minutes' time at the proper point may be the saving of the lamb. If the ewe shows the least disinclination to own her lamb she should be put in a small pen with it for several days. By that time she will be all right. Twins are also best handled in the same way. It is well to divide the flock at this time by putting the ewes with the lambs in one bunch and the others in another. This prevents crowding and confusion and gives the lambs a better chance.

The lamb will be all right by the time it is two days old, if cared for up to that time, and will need but little additional attention. However, the old sow and the neighbor's dog, both of whom are fond of young lamb, should be ostracized from the yard and the pasture. When a few weeks old, the lambs should be given some grain in a creep. Bran and oats are commonly used at first, but soon may be replaced partly, and later entirely, by shelled corn. This aids materially in preparing the lambs for an early market.

SAVING OUR GREATEST CROP.

HOW THE CAMPAIGN TO PUT BABIES ALONGSIDE HOGS AND HORSES WAS BEGUN AND IS BEING CARRIED ON TO SUCCESS AT VARIOUS GRAIN BELT STATE FAIRS.

(Iowa Homestead.)

A sweet-faced, white-haired country woman walked out from the Western Live Stock Show at Denver last winter, gave her hair a few deft pats, breathed a tired sigh and wasted just enough energy to whisper to her companions, "I feel as if I were the center of a whirlwind that bids fair to take me off my feet." Saying which, she hurried to the depot, took a fast train to the capital of Iowa and, having plodded wearily up the long hill to the state house, fairly swept the staid legislators off their feet with the enthusiasm with which she pleaded for a $75,000 appropriation for a new building on the state fair grounds.

For the first few minutes the legislators were only idly interested. Then a mild sort of curiosity began to manifest itself as to what sort of a building this little gray lady was demanding. They had made appropriations for swine, horses, cattle and sheep; perfectly good state money had been expended for the housing of everything from acorns to zebras, "from agate to zinc." If there was any crop grown in Iowa for which ample provision had not been made, either for exhibition booths or competition premiums, they would like to know what it was. Accordingly, they sat up with anticipated triumph aglow on their faces as one of their number asked the little country woman what she had in mind when she spoke of Iowa's greatest crop, as yet altogether unrecognized by the generous state.

A smile played about the lips of the animated and feminine whirlwind vortex with the sweet face and white hair as she murmured one word only:

"Babies!"

The story with which this amazing and unexpected reply was followed gave the legislators an inkling of the big things concealed by the little answer.

At the 1911 Iowa State Fair, for the first time in any state, a babies' health contest was held, under the direction of energetic and charitably inclined doctors and club women. A country mother came with her two-year-old baby in tow. He was a sweet little fellow, with an ever-ready smile and his fond mother had pictured to herself, all the way as she drove in from the farm, how he was bound to eclipse all the other entries and win first prize. Was not his hair silkier and browner; were not his eyes a heavenly shade of blue; were not his cheeks perfect ovals? But when the kindly doctors had stripped the little lad, felt of his muscles, peered down his throat, thumped his chest and otherwise determined his fine physical points, as carefully and as systematically as the live stock judges went about their work in the handsome and permanent pavilions adjoining the humble little tent where the babies were herded, they shook their heads and passed down the line to the next entry. The indignant farm mother demanded reasons. They were quickly forthcoming: enlarged tonsils, adenoids, flabby muscles, trace of tuberculosis and so on; with not a single word about silken hair or eyes of heavenly blue. One of the doctors took the farm mother aside, handed her pamphlets and books on the care and feeding of babies, explained that the contest was for health, and not for beauty, and then bade her take hope, follow the prescribed course of daily routine and bring her baby back the next year.

That little rejected laddie from the farm, carefully reared on the outlined course of exercises and dietetics the ensuing year, won first prize in a class of more than forty entries at the contest held at the Iowa State Fair in 1912.

"So you see," said the little gray lady, "we can breed our babies with just as good and just as apparent results as we have long bred our pigs."

That is how it came about that the dignified legislators of a state as great and as rich as Iowa decided to appropriate $75,000 for a Child Welfare building, Iowa being the first thus formally to recognize the new campaign, just as it was the first to hold such a contest. There are figures a-plenty to prove the necessity, the crying need, of just such a campaign and just such recognition. Consider these, for instance: There are in Iowa 7,545,000 hogs, one-sixth of which are suffering from cholera. Immediately an insistent demand goes up for $50,000 to suppress this disease, for the hogs are worth $12,000,000. There are in Iowa, likewise, 258,000 babies and children under five years of age, one-fifth of whom will be dead within the coming five years, following the ratio proven by medical science. A child, well born, is estimated under the law to have a value of $500, a total for the state $129,000,000, one-fifth of which, or more than $25,000,000, will be lost, as against $12,000,000 on pigs. Why, then, argued the little gray lady and her determined co-workers, should the legislators look aghast at an appropriation of $75,000 for a campaign to save babies when they thought nothing of appropriating $50,000 with which simply to check disease among pigs. Babies versus pigs, pigs versus babies, looked at either way there seemed to be merit, indeed, in the proposition to pay as much attention and give as much money to the greatest crop of all, which heretofore had been absolutely overlooked.

The idea came quite unexpectedly, it was of small beginnings. It originated in the brain of the little country woman who is devoting her time to its propaganda. She was in charge of a booth at her home county fair, just such a fair as is held annually in hundreds of rural counties; pumpkins and slow horse races, hogs and crazy quilts, homemade jelly and threshing machines snorting all over the lot. "I was listening to the talk that drifted in, in snatches, of prizes won on hogs and horses, sheep and cattle and poultry," says the originator of the whole affair, "the same talk I had been hearing at every fair for ten years. Suddenly I became conscious of how often I had heard this talk about the wonderful improvement that had been made in the conditions of live stock in that length of time. Just at this minute a woman with a fretful baby in her arms stopped near me to rest. A child of three clung to the mother's skirt with one hand and with the other fed herself a large, underripe banana. Three more brothers and sisters, old enough to care for themselves a little, clambered about, in imminent peril of broken necks and trampled toes. One might label the picture, I thought, an average American family on a holiday. As I looked at these children I saw myself and brothers and sisters forty years ago, no better, no worse. Measles, whooping cough and mumps would be a part of those children's upbringing, just as they had been of mine. If they lived through these necessary evils, without too great depletion of vitality, and if dread disease did not take them off, they might grow to manhood and womanhood. Then I began to calculate that this family would make five new families of the same kind, possibly with less endurance.

"A friend of mine interrupted the trend of my thought to invite me to go to the stock barns with her, where the premiums had just been awarded. The man in charge of the horse barns showed his beautiful animals, sleek and shining, with glowing pride. Blue ribbons and red ribbons showed bravely on many headstalls. Every animal in the clean, well-ordered cattle and hog pens had been fed and groomed with the utmost care. A man pointed with pride to a pen of hogs and told us that they had been watched almost night and day; the water they drank had been analyzed, their food measured and weighed, and only the kinds given them that would bring certain results. It was then that the idea of a babies' health contest for our next state fair was born."

From such a little beginning has come the series of babies' health contests held during the past two years in a score of county and district fairs, in at least three state fairs, and now planned for a dozen state fairs in 1913, with a grand international contest in the Panama exposition, at San Francisco, in 1915. The little gray lady, the originator of the whole idea, Mrs. Mary T. Watts, of Audubon, Iowa, gives a list of the contests already held, as follows:

Iowa State Fair, 1911, 50 entries; 1912, 275.
Missouri State Fair, 1912, 200 entries.
Oregon State Fair, 1912, 200 entries.
Milwaukee Household Exhibit, 1912, 80 entries.
Fargo, N. D., Neighborhood Clubs, 1912, 150 entries.
Farmers' Week, Columbia, Mo., 50 entries.
Omaha, Made-in-Nebraska Show, 1913, 200 entries.
National Western Live Stock Show, Denver, 1913, 200 entries.

In addition to these, contests were held in county and district fairs, in 1912, in a score of Iowa towns, notably Ames, Audubon, Avoca, Algona, Brooklyn, Farmington, Marshalltown, Moravia and Sutherland.

State-wide contests are already scheduled for 1913 in Iowa, Oregon and Missouri (at the state fairs), with possibilties of Ohio, Massachusetts, Vermont and Michigan. Oregon has made appropriation for a Child's Welfare building and Denver proposes making more of a feature of the babies' health contest next January than it did this year, although the enthusiasm was so great at the contest that a National Eugenics Society was organized at the live stock show, Mrs. Watts (the little gray lady) being elected president, Mrs. Mary Elizabeth Bates, of Denver, vice-president, and O. M. Plummer, of Portland, Oregon, secretary.

The manner of conducting the babies' health contests is interesting in the extreme and never fails to attract large numbers of applauding spectators. The entries are divided into classes, according to sex, age and residence, prizes being awarded for the most perfect entries in one-year-old, two-year-old and three-year-old classes, both from towns and country. The babies are subjected to tests, both physical and mental, by medical experts and trained nurses, who handle their little charges deftly so as not to unduly frighten them, but to observe them as nearly normal as possible. Stripped of their clothes the tots are measured, weighed and examined for physical defects; throat specialists examine for evidences of enlarged tonsils or adenoids; calipers are deftly swung around heads a-bloom with brown or golden tresses, in order accurately to discover the contour of craniums; chests are thumped and stethoscope records are made to test the lungs, while bright colored balls and toys are dangled before surprised eyes in order to test the quickness of mental grasp and the ability of the juvenile brain to respond to a suggestion. And all the while fond and doting parents and even tentative and timid bachelors stand afar off and wonder why the examiners forget all about noting the texture of hair, the Cupid's bow of the lips and the dimples which play about laughing mouths. But these are health contests, not beauty contests; and the item of daily food, the question of sleeping room ventilation and the apparently immaterial details of play are more carefully gone into by the doctors and nurses than are those perfectly apparent points of facial beauty on which former contests were invariably determined.

AMERICAN HEN AND COMPANY—THE FARM WOMAN'S BANK.

(By A. H. Snyder in Successful Farming.)

VALUE OF POULTRY AND EGGS RAISED IN ONE YEAR.

Illinois	$ 34,344,482
Missouri	33,918,187
Iowa	33,150,585
Ohio	30,746,291
Indiana	26,013,342
Pennsylvania	25,780,701
New York	25,504,894
Kansas	23,246,574
Texas	19,424,711
Michigan	17,926,239
California	14,683,209
Kentucky	14,542,124
Minnesota	14,482,329
Wisconsin	14,180,433
Nebraska	13,856,885

(From the U. S. Census for the year of 1909.)

The American Eagle may perch serenely upon the back of our silver dollars, but it takes the great American Hen to make the dollars for the eagle to perch upon.

Uncle Sam's last census, taken in 1910, says that in the preceding year there were 488,468,354 fowls raised, worth $202,506,272. He also tells us that during the same year the American hen laid 1,591,311,371 dozens of eggs, worth $306,688,960; total poultry value $509,195,232.

But, these figures are too big for our ordinary little minds—we don't grasp their meaning. We know how big an egg is, or how many we can eat on Easter, but, when people talk about billions of dozens, it is beyond us. We don't know whether we could put all those eggs in our barn or whether there are so many that we couldn't pile them all in the back pasture.

Let us see if we cannot get a little better idea of the real size of our annual crop of "hen-fruit" than it is possible to obtain from a long string of figures.

When you tell about the size of the fish you almost caught, you say that "it was as long as the table," or "it would reach half-way across the room." Thus, it is only by comparing unknown objects with things which are familiar that we can obtain a real knowledge of their size.

In the first place an ordinary crate in which eggs are packed for shipping holds thirty dozen. It is two feet long, one foot wide and one foot high, which makes two cubic feet. Hence one cubic foot holds fifteen dozen eggs. A simple calculation shows that it would take 106,087,425 cubic feet to hold the eggs showered upon the United States in one year by the American hen.

But still those figures are too big for us, so we'll have to go to the barn, or something else with which we are familiar.

I don't know how big your barn is, but if it is 80x80 feet and 20 feet high to the eaves, it is a good sized barn and contains 128,000 cubic feet. You are probably thinking that you could pack all the eggs in the country in a barn that size. But, hold on a minute. They say that "figures don't lie" and the figures say that it would require 828 such barns, packed solid to the eaves as close as eggs are packed in a shipping crate, to hold all the eggs laid in a single year. And even then you would have a few thousand dozens left over for omelets, or to hatch out chickens for next year.

It would require 41,440 ordinary box cars, packed to the roof, or a solid train 345 miles long to haul the annual egg crop. A train of this length would just about reach from Chicago to Des Moines, going west, or from Chicago to Columbus, Ohio, headed east. There sure would be a mess if such a train were wrecked!

Talk about your great pyramids of Egypt—they are great all right, but the American hen furnishes material every year to build a pyramid a quarter of a mile square at the base and over 182 feet high.

Truly the American hen is some bird. She sits on the barnyard fence and cackles to the accompaniment of the piano which she has placed in the parlor for the farmer's daughter, or she mingles her contralto tones in duet with the tenor notes of the wonderful Caruso, as reproduced by the phonograph or victrola which she has purchased to assist in bringing pleasure to the family.

She is the farm-wife's banker and pays good interest upon every deposit of care and attention given her. No deposit is so small that it is not appreciated and large deposits are reciprocated in proportion. Hers is the soundest bank in existence. It staunchly refuses to be influenced by flurries on Wall Street or the stock exchange.

Local representatives of the great Bank of American Hen & Company are stationed upon almost every farm and are invested with full power to act. The representatives on a given farm constitute the stock held by that farm; they receive all deposits and promptly pay the interest on same.

Perhaps a new washing machine is needed. The farm wife talks the matter over with her local representatives of the Bank of American Hen & Company. Provided her dealings with them have been such as to justify their confidence, she is instructed to purchase the desired machine and charge the same to their account. In a short time they hand her the bill, receipted in full, and she arranges for a carpet sweeper, vacuum cleaner, fireless cooker, or a new range.

Other articles are suggested, but about this time her bankers call a halt and issue a few words of good advice. They call her attention to the fact that now is the time of year to increase her stock. It is pointed out that sitting hens pay no bills and that to enable them to return the greatest profits, it is necessary to provide the flock with up-to-date labor-saving machines so that they can work most efficiently. The suggestion is made that an incubator properly handled will insure sufficient increase in stock to justify the purchase of the many articles needed at the time of spring house cleaning, not to mention the spring outfits of wearing apparel necessary for herself and daughters.

The average house-wife is accustomed to plan for the future and recognizes the wisdom of this advice with the result that her stock in the Bank of American Hen & Company is greatly increased and one by one are added to her house and wardrobe the many articles for which she has longed. The set of lace curtains which would so greatly improve the appearance of the front windows are hung in place and she walks past the house a couple of times to see how they appear from the road. For years she has longed for an easy chair for the living room and at last her wish has developed into a reality.

If all the wall paper, carpets, rugs, stoves, cooking utensils, furniture, pictures, etc., which were provided by the American hen were removed, there are thousands of our comfortable homes which would appear mighty barren and cheerless.

When the good farm-wife and the girls have carefully studied the catalogs and decided upon the new dresses, coats, hats, and shoes which would be most becoming to their particular type of beauty, or most serviceable under their conditions, they again go into conference with the hens. And when Bertha graduates or Vera gets married the necessary outfits are charged to the Bank of American Hen & Company and are promptly paid.

Nor do we forget that there are thousands of happy farm homes in which the merry cackle of the hens has a deeper significance than the announcement of another payment made upon some article for convenience, adornment, comfort, or pleasure. I refer to the many instances in which the hens have literally pecked away or are pecking away the mortgage which threatened the very foundation of the home. Like the drops of water which gradually wear away the hardest rock, so must the most obstinate mortgage finally lessen before the persistent attack of a flock of hens. Taxes interest and rent come around with relentless regularity, but they are no more regular than the income from the American hen.

Furthermore, this wonderful bird has shown us how to "return good for evil." She recognizes the fact that automobiles are not to blame for the depletion they make in her family, but rather the heartless and reckless drivers; consequently she continues to purchase motor cars for the farmer and his family.

The American hen produces an immense amount of wealth every year —more than the gold produced in the same length of time. The 1912 Year Book of the U. S. Department of Agriculture makes the following comparisons:

Value of poultry products	$ 570,000,000
Value of gold produced in Continental United States	92,989,000
Value of silver produced in Continental United States	63,761,000
Value of gold produced in the world	474,333,268

The question which should occur to each farm home is "are we getting our share of this wealth, and if not, why not?"

Poultry raising in the U. S. has thus far been a side-line to farming and has almost invariably paid well for any labor and attention given it. The great mass of poultry and eggs comes from the farms, while the specialists furnish but a minor portion. Farm poultry raising is on the increase and it would be well for every farmer and farmer's wife to thoroughly consider whether they could not enlarge their poultry business with profit to themselves. They have the land, the feed, and the labor. All that is required is a little more study and application. Expenses will scarcely be increased from what they now are, but the profits will multiply exceedingly. There is no kind of farm live stock which pays greater dividends in proportion to capital invested, provided a limited amount of care is given.

GROWING CATTLE IN THE CORN BELT.

(Wallaces' Farmer)

Whether we like it or not, and whether we are willing or not, there are great forces at work that will compel us sooner or later to grow more cattle in the corn belt—to grow as well as to feed them. Fifty years ago, forty years ago, thirty years ago, we grew a great many cattle in the corn belt. There were vast areas of land, raw prairie, covered with blue-stem and other nutritious grasses, on which in many parts of the corn belt herds of cattle roamed, where the cost of keep even with careful herding was about a dollar a head during the summer season, and where the cattle could make from 200 to 300 pounds' gain at this minimum expense. Every fall, men rode over the country, bunching up weanlings and yearlings for further development under the same condition, and two and three-year-olds for feeders in the older portions of the corn belt and in the states east. When we say this, we are simply reciting what now seems ancient history to our older readers.

Then came the opening up of the great western plains, the range country, and the improvement of the stock by the use of the best beef sires. In time, farmers found it cheaper to go to Omaha, Kansas City or Chicago and buy up lots of feeders, assorted as to size, weight and color. They found they could do this cheaper, or at least easier, than they could be bunched up in the decreasing herds in fenced pastures. From that time on, the corn belt became a feeding country instead of a breeding country.

Then came dry farming, so called, and the enormous speculation in grazing lands, and the breaking up of the ranges through the advent of the settler and homesteader. In the last five or six years the supply of these feeders from the range has been steadily decreasing. The ranges have emptied out, and the fenced ranches are either gone or going, not altogether, but to an extent that seriously affects the supply of feeders and advances the price. We have sold numbers of carloads of cattle at from $2.75 to $3.25 per hundredweight, which would be snapped up today at more than twice these figures.

In the meantime, our cities have been growing, and the demand for milk increasing, until the demand of Chicago and St. Louis eats into the beef growing country of Illinois, that of Cleveland and Cincinnati into that of Ohio. Pittsburg, Buffalo, New York and Boston take about all the possible milk production in Pennsylvania, New York and the eastern states; and they are even now drawing on Canada for milk to supply New York and Boston. The supply of feeders from these milk producing sections has become a negligible quantity.

Therefore, if the corn belt is to feed cattle, it must grow more and more of them itself. Our readers may not see just how to do it at a profit; but they will be forced to find a way before a great while. There will always be more or less cattle grown on the ranges—more in the coming years than now, because of the failure of the dry farmer to realize his expectations. Much of this dry farming land will revert to pasture and again be grazed by sheep and cattle. Persons who are familiar with the history of the range know that in this we are simply reciting ancient history. We have seen great ranches, that were once great wheat fields, on which men expected to make fortunes by dry farming or some other kind of farming, and failed.

Meanwhile, in the last twenty years the amount of irrigated land has been increasing, lands that grow alfalfa of the very best quality. Alfalfa is growing in favor all over the eastern country; but the freight rates will sooner or later, in fact, are already beginning to impress upon alfalfa growers the importance of feeding it on the farm to cattle grown on the range. Alfalfa requires baling. It is bulky, and it costs about as much to ship it from the west to central Iowa as the grower receives for growing it. Hence we have an increasing number of alfalfa fed cattle, which still further decreases the supply of feeders for the eastern market. In other words, an increasing number of the cattle grown on the range will be fed in the irrigated sections, and what corn is needed shipped out to them, rather than ship the alfalfa hay farther east.

The great reason why farmers will be obliged to grow more cattle, however, is the necessity of maintaining soil fertility. We may talk as we like about good farming, about intensive farming, about commercial fertilizers, and all that; but it is not possible to maintain soil fertility without maintaining a supply of vegetable matter in the soil. This can be done only by giving back to it, in the form of grass roots, grass and manure, what passes away in the process of cultivation. For the more we cultivate the land, the quicker we destroy the humus material in it, and hence render it impossible for the plant to utilize the fertility that remains. For vegetable matter is required in order to enable the land to hold moisture, to withstand drouth, and to keep it in such physical condition that the plant roots can use the plant food in the soil.

It is possible, we know, to grow green crops and turn them under, and still maintain soil fertility, provided the manurial supply is maintained; but, practically, where this is done it must be by growing grass, grazing cattle, feeding them on the farm, and hauling out the manure. This in itself will not maintain soil fertility forever. This old planet of ours is wearing out, and nations like England, that have maintained soil fertility, have been buying plant food from other nations and conserving them as well as conserving their own. England buys guano from Chile, buys our grains and cottonseed meal, grinds up the bones of mummied cats in the tombs of ancient Egypt, brings grain from all parts of the world, and thus maintains her fertility.

Theoretically, the fertility of every nation in the world is bound to wear out sooner or later, where they have sewage systems such as we have in civilized countries. Therefore, it is all the more important that we maintain the vegetable matter in our soils, quit soil robbing, and get down to real farming. We know of no way that this can be done practically and effectively without growing more cattle.

If Iowa were to ship her entire corn crop onto the market, it would demoralize that market. We must feed the great bulk of our corn on the farm. We have in the past, so the government tells us, been feeding 80 per cent of it. We should feed 90 per cent. But how are we to get the cattle to feed without growing them?

This may seem to our readers like mere speculation, theory, anticipation of dangers that do not seem to them imminent or likely to come soon. But if they will simply revert to their own experience; if they will notice a soil destitute of vegetable matter, that puddles in a wet time and bakes in a dry time, and is regarded as worn out; if they will notice how bad weeds grow on these partially worn-out lands; if they will keep their eyes open as to what is going on around them; if they will reflect on the waste of stored fertility that has been going on in the corn belt for the last forty years; if they will note the condition of New England, much of New York, and other eastern states; if they will think of the vast acreage of land that has been turned out in the south to grow up in trees, because no longer profitable to cultivate, they will be convinced that it is time for the farmers in the corn belt to consider carefully the best methods of keeping what fertility they have and increasing it to the extent of their ability.

We are no longer shipping cattle to Europe. In our recent visit, we noticed carefully the arrivals from week to week—sometimes none, sometimes merely three or four hundred. We notice that London is proposing to sell her abattoirs, because there are no more live cattle coming in. If our readers, will notice what is going on around them, they will be convinced that we are not alarming them needlessly, but pointing out a real danger and a duty.

We must grow more cattle, if we are going to feed cattle in the future as we have in the past. We must learn how to grow them by adopting rotations, and fencing our fields, by better breeding as well as better feeding. It is only by this process that we may expect our lands to increase in price or even to maintain present prices. For eventually lands will be sold at their value only; and that value is based on the income or rental they return. They will rise so long as they pay an income of 4 per cent on the price, and no longer; and the income they return will depend very largely on the amount of cattle that are grown and fed.

WHY THE SHROPSHIRES ARE SO POPULAR.

E. S. Leonard, Corning, Iowa.

(Before Annual Meeting of Shropshire Sheep Breeders of Iowa.)

I have been requested to write an article giving reasons "Why the Shropshires Are So Popular." I fully realize you have called on a weak member for a good article. However, I will endeavor to give you what I consider from actual experience and observation of many years, some particularly strong reasons of the Shropshires growing in popularity. With all due respect to the other down breeds and their breeders it is only natural for me to support a choice in this most popular of breeds, the Shropshire.

In the Shropshire you have a good mother, as well as a copious nurser. No one will deny the necessity for these two essential requisites regardless of breed. And in our choice we have an animal possessing superior worth in these two particular points.

To the small breeder their prolific tendencies commend them, for in the increase of the offspring lies the greater income. Mutton being the greatest source of revenue, the twin bearing ewe for which Shropshires rank high, makes them desirable.

Their carcass, of compact form, combined with the well set leg of mutton, and evenly fleshed loin, place them in the foremost rank in superior mutton qualities.

The wool of the Shropshire ranks well near the top in possessing essentials required by the manufacturers. The uniform staple and density of fleece, adapt them to the different climatic conditions as does no other so claimed general purpose sheep.

Another strong point in favor of Shropshires is their docility. Kind and gentle to their young, easy to handle, so calm and intelligent in many ways, almost human, readily adapting themselves to any changes you may make, as to moving from one place to another; their fondness for their good shepherd, their freedom from treachery, account for their kind and gentle dispositions. It requires only a meager apology of a fence to hold them within prescribed bounds. Of no other breed can this be truthfully said.

As the day of intense farming is rapidly approaching, nothing can commend the Shropshire more favorably than the fact of early maturity on a minimum amount of feed. To the small flockmaster of limited acreage this is no small argument in favor of a general purpose sheep like the Shropshire.

In conclusion let me say that I feel every Shropshire breeder will join me in commending the work that the American Shropshire Registry Association has done in furthering the popularity of the Shropshire, and we should all band ourselves together to assist the association in every way possible to further the popularity this great and good breed has already attained.

ANNUAL REPORT OF THE IOWA BEEF PRODUCERS ASSOCIATION, JANUARY 1, 1913, TO JANUARY 1, 1914.

Report of the annual meeting, Ames, Iowa, January 5, 1914.

The annual meeting of the Iowa Beef Producers Association was called to order by President Escher January 5, 1914, in Agricultural Hall, Iowa State College, Ames, Iowa, 3:00 p. m. Secretary absent and Howard Vaughn appointed Secretary pro tem.

Report of the year's work of the Association made by the Association Representative. Report approved.

Moved that a nominating committee of three to make nominations for Directors of the Association be appointed by the Chair. Motion seconded and carried.

Chair appointed W. B. Seeley, Mt. Pleasant, Chas. M. Russell, Carroll, Prof. W. H. Pew, Ames.

Followed general discussion of plans of work for the future. The Beef Producers Special Trains were commended by Pres. Escher, Dean Curtiss and others. Discussion of the possibilities of the calf show as a means of promoting the beef industry participated in by Mr. Palmer, Eddyville, Mr. Reed, Marengo, Col. Benson, Sheldon, Mr. Seeley, Mt. Pleasant, Mr. Hughes, Mt. Pleasant, Mr. Willets, Mt. Pleasant, and others.

Nominating Committee report the following nominations for Directors:

1st District—W. B. Seeley, Mt. Pleasant.

2nd District—Fred McCulloch, Hartwick.

3rd District—Frank Zenor, Woolstock.

4th District—J. A. Kildee, Osage.
5th District—W. W. Vaughn, Marion.
6th District—Ralph Sherman, Grinnell.
7th District—John Shambaugh, Booneville.
8th District—C. W. Huntley, Chariton.
9th District—C. W. Hunt, Logan.
10th District—Chas. Russell, Carroll.
11th District—R. W. Cassady, Whiting.

Moved that the report of the Nominating Committee be adopted and Directors declared elected as named. Seconded and carried.

Moved, seconded and carried to adjourn.

MEETING OF THE BOARD OF DIRECTORS.

Meeting called to order by Pres. Escher. Secretary absent and Howard Vaughn appointed Secretary pro tem.

Election of Officers—The following officers were elected in regular form: President, Charles Escher, Jr., Botna; vice president, C. W. Huntley, Chariton; Membership and Corresponding Secretary, George H. Burge, Mt. Vernon; Treasurer, C. S. Hechtner, Chariton.

Moved by Mr. Seeley that it was the sense of the Board of Directors that the Executive Board re-employ Rex Beresford as Association Representative at the same salary as at present. Seconded and carried. Moved by Mr. Seeley that the Association Representative be instructed to communicate with the various short courses, institutes and fairs with the view to working up shows of market beef calves and yearlings. Seconded and carried.

Moved that the Board of Directors favor the running of a special train on some east and west line of railroad during June and on a north and south one in the autumn. Seconded and carried.

Moved that the Board adjourn and refer all matters that come up to the Executive Committeee with power to act. Seconded and carried.

OPEN MEETING MONDAY EVENING, JANUARY 5, 1914.

Over 400 farmers and cattlemen attended the evening meeting of the Iowa Beef Producers at the short course at Ames. The meeting was called to order by Pres. Charles Escher, Jr.

In his opening address Pres. Escher reviewed some of the lessons of the year brought out in producing the champion car lots of cattle shown by Escher and Ryan at the 1913 International.

First in importance was emphasized the value of good blood. Without the proper quality in his calves secured by good ancestry, the most skillful feeder fails to produce finished cattle of show or good market quality.

Next was mentioned good feeding from start to finish. The champion steers and their mates were fed grain in creeps while following their mothers on pasture. From weaning time till marketed the cattle were well fed. Silage, clover and oat hay, corn, oats and barley, linseed oil meal, cotton seed meal, and molasses all were used in giving variety and promoting appetite.

"I was slow in getting silos," said Mr. Escher. "I was like the man who told me once that he had lost a million dollars in Iowa in an early day." 'How was that?' I asked. 'By not having cattle enough to eat all the grass that was here when I came,' was the reply. I lost a lot of money by not having silos long ago. However, I have four now and will have four more by filling time."

Another point proved by the year's feeding was the advantage of feeding younger steers. Through the latter months of the year the steers started on feed as calves made nearly half a pound of grain a day more than their brothers a year older. The gains were also made more cheaply. The younger cattle won the championship and sold better than the two year olds.

"The baby beef steer is the butcher's ideal," said Mr. Escher. "He makes bigger and more economical gains; may be carried past a bad spot in the market if necessary without loss; costs less to produce, sells better and yields more profit. That is why the older steer is going out of fashion with the man who is producing beef."

Speaking from the topic "The Trend of the Times in Beef Production" Prof. W. H. Pew, head of the Animal Husbandry department of the Iowa State College, pointed out that the year's markets, recent show yard records, experimental records and the action of many of the most progressive cattle men all point toward the production of so called baby beef, or the fat 900-1150 pound yearling rather than the heavy two or three year old steer. Especially is this the case where the feeder cattle must be produced on Iowa land.

The general beef cattle shortage and consequent demand and high price, feeder cattle scarcity and high prices of feeds and cattle all indicate the growing and feeding out of calves rather than feeding of older steers on many Iowa farms.

Corn silage, alfalfa and clover, the better care of pastures, the proper use of concentrates and above all, better breeding stock, all help cut down the cost of producing beef. The trend of the times seems to be greater and more efficient use of these things on the average cattle producing farm.

"The Present Status of the Beef Industry" according to Dean C. F. Curtiss, is that of any industry in which demand for the product exceeds the supply. Since 1907 the population of the United States has increased 9.5 per cent. During the same time the number of beef cattle has decreased 30 per cent. The world shortage of beef is nearly as acute. Meat importations under free trade conditions are not large enough to be seriously important once markets are adjusted.

The west will produce more beef than now. Proper lease laws, and regulation of range and grazing grounds will increase their meat producing power. This has already been shown in the grazing lands of the forest reserves.

The United States will always need immense quantities of beef. The American workman must and will have meat, and this will be beef so long as he can pay for it. Iowa can produce beef now and in the future at a profit if the best methods of production are used.

Beef making on the Iowa farm not only means larger immediate returns from the crops fed to the cattle, but increasingly larger returns from the farm as well, for beef making means conserved fertility and larger crops in future years.

Rex Beresford, the Association representative, gave a short review of the work of the association during the year 1913.

In addition some plans for future work were discussed. Local calf shows held in connection with farmers' institutes, corn shows and colt shows were presented as a means of arousing interest in beef production in communities where such shows could be staged. A corn show and calf show should fit in especially well together though there is nothing to prevent colt and calf shows being held in conjunction. A calf show is being held this season at Luverne in Kossuth county. A successful one has been held at Blairstown in connection with the farmers' institute. Such shows are already being planned for at least seven other communities during 1914.

ANNUAL REPORT OF WORK OF IOWA BEEF PRODUCERS ASSOCIATION, 1913.

The active work of the Iowa Beef Producers Association began March 8, 1912, with the completion of the organization and the hiring of an Association representative at that time.

The first year's work of the Association up to January 1, 1913, is described in detail in the 1912 report to the Association.

Under the direction of the Executive Board of the Association, the work carried on in 1913 has been very similar to that of 1912. Roughly it may be divided under the heads of Investigational, Publicity, Fairs and Institutes and Special Train Work.

During 1913 investigational work was done largely during the months of May, June, July and August. A part of the time during June and July was spent with the Automobile Farm Tours managed by the Extension Department of the College. This combined investigational and educational work.

All told during the year approximately 290 cattle farms were visited. From the notes gathered have been compiled material for articles, lectures and pamphlets.

In the publicity line of work articles dealing with beef production, cattle feeding, etc., have been written for the various farm papers of the state and those having circulation in the state. In addition to these news items and short articles have been sent out to the daily papers and a mailing list of 300 weekly papers in Iowa. Some matter dealing with the beef industry has been sent out through the bureaus furnishing agricultural "plate" matter to Iowa weekly papers.

A five by seven inch illustrated booklet of sixty-four pages has been prepared and printed in an edition of 20,000 at a total cost of $643.30. Of this edition 12,000 have been distributed at fairs, institutes, special trains, by mail and in other ways, leaving approximately 8,000 copies on hand.

Two hundred and thirty-one letters of inquiry relating to beef cattle breeding and feeding have been received and answered. These came mostly from Iowa farmers, about 10 per cent being from outside the state. This correspondence seems to be growing quite rapidly in volume.

During 1913 the Association Representatives attended and spoke at forty-three farmers' institutes and short course meetings, four farmers' picnics and two fall festivals, and judged beef cattle at nine fairs and shows in Iowa.

From October 21 to 31 inclusive a Beef Producers' special train was run over the C. & N. W. Railway lines in northwestern Iowa. This train furnished free by the North Western road, aside from transportation paid by the speakers, was made up of two lecture coaches, cars for the accommodation of the speakers, and a baggage car containing five head of cattle, specimens of the leading beef breeds used for demonstration purposes.

Stops were made at seventy-nine towns and eighty meetings were held. Nearly 10,000 farmers visited the train. The speakers on the train for all or a part of the time were Dean C. F. Curtiss, Profs. W. J. Kennedy, W. H. Pew, J. M. Evvard, C. N. Arnett, E. F. Ferrin, H. W. Vaughn, G. W. Godfrey, O. W. Johnson, Howard Vaughn, Charles Escher Jr., G. H. Burge, Capt. W. S. A. Smith, Geo. M. Rommel, R. W. Cassady and Rex Beresford.

In the opinion of those connected with the train it was a success as a method of arousing interest and distributing information.

TESTING SOILS IN THE LABORATORY AND FIELD.

BY W. H. STEVENSON AND P. E. BROWN.

(Circular No. 15, Agricultural Experiment Station, Iowa State College of Agriculture and Mechanic Arts.)

WHAT THE STATION CAN DO TO HELP THE FARMER.

The chief aim of the soils section of the Iowa Agricultural Experiment station is to help the farmer solve his soil problems. This is possible because the work of the section consists not only in the study of soil problems of statewide interest, but also in the application of the results of such general investigations to local conditions.

It may be said, therefore, that there are two distinct divisions of the soil work. First, there is the experimental or investigational part, which consists in the planning and carrying out of experiments on methods of soil treatment and soil management; and second, there is the advisory part. Through this latter function the soils section aims to keep in close touch with the farmers and to help them solve their local problems, often arranging special experiments to aid in the solving of them.

The experimental work in soils during the past few years has included the study of many important questions, chiefly, however, the rotation of crops, the use of fertilizing materials, the drainage of the soil, and the management of certain partially unproductive soils, such as gumbo, peat, alkali and "push" soils. In a general way it may be said that all effort has been directed toward securing the greatest crop production with the least soil depletion.

It is evident therefore that the section has material at hand which permits of authoritative statements along many lines of soil management. There are, of course, many questions which it is not yet possible to answer absolutely and completely, because anything like a complete study of soils of the state will require years of labor and abundant facilities. In so far as investigations have led to conclusive evidence along certain lines, the section is ready and glad to make recommendations regarding the management and improvement of Iowa soils, and to do it free of charge.

In order to advise regarding the proper treatment of any soil it is necessary, however, that certain facts regarding the lay of the land, the crops grown, the fertilizers added, etc., be in the hands of the station men. It is not merely enough to send in a small sample of soil, although that, of course, is helpful in many cases. It is suggested that the following questions be answered by every farmer who wishes advice. These answers and, if desirable, a sample of soil carefully taken, as will be described later, should be sent to the Soils Section of the Iowa Agricultural Experiment Station, Ames, Iowa.

Where is the land located?
How long has the land been under cultivation?
What system of cropping is practiced?
What rotation of crops is used?
What was the crop yield last year?
What was the crop yield the preceding year?
What crop yields the best?
What crop gives the poorest results?
Has inoculation been practiced for legumes?
Is the land level or rolling?
What is the depth of plowing?
Are there any peculiarities about the soil?
Is the land drained? How?
How much manure has been applied? When?
How much fertilizer has been added? When?
How much lime has been used? When?

WHAT THE STATION CANNOT DO.

Certain limitations are imposed upon the work of the soils section by the laws under which experiment stations were founded and by the size of the annual appropriations. The section cannot undertake to analyze samples of soil or fertilizers for private parties. Analyses of soils and fertilizers are expensive and tedious operations, and should all members of the staff, the size of which is limited by the appropriations, spend their entire time on such work, only a small part of the samples annually received could be analyzed. Therefore such analyses are out of the question for financial reasons.

But there are further and more important reasons why such analyses are not made. In the first place, samples of soil taken at random without regard to their representative character may be so very local in nature that their analyses would be of practically no use to the farmer, and of absolutely no general value. Furthermore, complete chemical analyses of soils give only their total plant food content. Such analyses may show lack of nitrogen, phosphorous or potassium, or an abundance of these elements, but they give no idea of the rate at which they become available, and hence merely indicate the ability of the soil to support plant growth. For instance, nitrogen, phosphorous and potassium may be shown by chemical analyses to be present in abundant amounts, but an application of a nitrogenous, as phosphate, or a potassic fertilizer might yield astonishing returns. On the other hand, very small amounts of these constituents might be present and yet additional applications might give a very small, or even no increase and therefore represent an actual money loss.

The reason for this is simple. All plant food in the soil does not exist in a form available for plants. That is, it must be prepared for them just as human food is prepared in kitchens. The raw materials are acted upon by various agencies and changed into forms which are of use to plants. The bacteria may be called the cooks in charge of the plant kitchens. When these cooks are inefficient there is a decrease in the production of prepared food and the plants are inadequately fed. When the cooks go out on a strike, because of improper working conditions, such as lack of air, water, or food (organic matter), no food is prepared and the plants starve.

In all soils there is a certain relation between the raw food known as potential, or total plant food, and the prepared material, known as active or available plant food, and this relation is determined by the efficiency of the bacteria (the cooks). That efficiency is secured by keeping conditions in soils satisfactory for bacterial growth by providing the proper amount of air, maintaining the best moisture conditions, and supplying food material, or organic matter. These conditions may be kept right by proper tillage, drainage or irrigation, and the addition of manure.

Chemical analyses do not show whether or not conditions are right for bacterial activity. Chemical analyses, as has been pointed out, give only the total or potential plant food content of soils and hence merely indicate the needs of the soil, unless the total food supply is very small, in which case it is safe to assume that more should be added.

It has been well said that "the chief value of a chemical analysis is to serve as an absolute foundation upon which methods of soil treatment can be safely based for the adoption of systems of permanent soil enrichment, not for one crop or one year, but for progressive improvement."

The soils section is now working on a soil survey of the state and analyses are being made of many samples representing typical soil areas. These samples have been obtained with great care by the station men using the most accurate means of sampling, and they are representative of definite soil types. Thus, while it is impossible to analyze all the soils of the state, the composition of representative soil types may be ascertained and the soil areas mapped in detail. From these data and experimental results obtained on the different soil areas information will be available regarding the treatment advisable for any soil, the crops best adapted to it, and the best method of management.

These facts give all the information which the farmers need. The analyses of the typical soil areas give the approximate composition of their soils and the plant food deficiencies may be as closely determined as would be possible for chemical analysis of special samples.

In the case of abnormal soils, however, where no typical analyses are to be found, it may be advisable for the farmer to collect a sample of soil, as will be described, and have an analysis for nitrogen, phosphorous and potassium, and possibly for calcium and magnesium made by a commercial chemist.

Using the analysis as a basis, field tests should then be made to obtain definite information regarding the actual influence of different fertilizing materials.

Collecting Soil Samples.—In the few cases where samples of soil need to be taken, either to be sent to the station for examination or to be analyzed by a commercial chemist, care should be taken that they are representative of the entire field and not peculiar merely to the spot from which they were taken.

The places from which the samples are to be obtained need to be carefully cleaned of grass and other vegetation. About twenty or more different spots a few rods apart are chosen, all apparently representative of the soil type, and borings are made to the depth of plowing. These borings may be made by means of a regular soil auger, which is about 40 inches long and 1½ inches in diameter, the kind used by the station men, or samples may be taken by means of a trowel or spade.

The borings or samplings are then thoroughly mixed and placed in a clean receptacle. A strong muslin sack may be used for mailing or expressing a sample of soil for an anaylsis or an inspection. The surface samples are usually taken from the surface to a depth of 6⅔ inches. A second and a third sample are then taken in the same manner, one of the subsurface soil 6⅔ inches to 20 inches, and one of the subsoil 20 inches to 40 inches.

It is quite essential that all samples be taken as suggested, for soil is very apt to be quite variable in composition and the samples should represent definite soil areas. If they are not representative the results of the analyses are of no value whatever.

SOME TESTS WHICH THE FARMER CAN MAKE.

From the results of the soil survey of the state, which has been mentioned, and the experimental data in connection with it, it will be possible to make many definite recommendations regarding profitable methods of soil treatment, but there are some tests of particular soils which the farmer can very readily make for himself.

Acidity.—In the first place the soil should be tested for acidity. Most crops will grow satisfactorily in acid soils, and many make no growth whatever.

There is a wide range in the sensitiveness of different crops to acid conditions, the legumes, such as clover and alfalfa, being most readily affected. Beneficial bacterial activities are also inhibited by acidity and the change of insoluble plant food into a soluble form is restricted or absolutely prevented.

There are certain outward indications of soil activity which are quite evident to any farmer. For instance, if clover or timothy refuse to grow and red top and sorrel appears instead, the soil is usually in need of lime. The presence of moss, or the growth of red sorrel bluets, horsetails or other similar weeds is evidence of a lack of lime in the soil.

There is, however, a definite test for soil acidity which may be made on any farm. It is known as the litmus paper test and is based on the power of acids to change blue litmus paper to red.

In order to make the test a small sample of soil, free from roots and grass, is put into a clear glass container like a water glass. Two or three strips of blue litmus paper are inserted in the soil so that they are half covered, care being taken that the portion in contact with the soil is not touched with the fingers. Pure water is then added carefully until the soil is thoroughly wet. The test is allowed to stand for several minutes and the paper removed and rinsed thoroughly. If the portion of it which was in contact with the soil has become red, the soil is acid and would be benefited by liming. The litmus paper for this test may be bought at any drug store.

That a thorough test for acidity may be made, samples of the surface soil and the subsoil should be taken from several different places in the field. If the soil is shown to be acid by this litmus paper test, then ground limestone should be applied. An application of 2,000 to 3,000 pounds per acre should be sufficient to remedy a moderate degree of acidity for most crops, but if the soil is shown to be strongly acid, and alfalfa or clover are to be seeded, 3,000 to 4,000 pounds per acre should be used.

By application of ground limestone not only is the acidity of some soils corrected, but heavy clay soils which are too wet and improperly aerated are opened up and made more fertile. Light sandy soils, also, which tend to lose valuable plant food by "burning out" and leaching and are apt to dry out too quickly are made more compact and thus more retentive of moisture and plant food.

The physical character of such soils therefore is improved and they are made more favorable for the growth of bacteria and indirectly for the growth of plants.

Finally the lime may remedy an actual deficiency in plant food, calcium. Alfalfa, for example, removes a large amount of calcium from the soil and the succeeding crop may suffer for lack of calcium.

Further information regarding the effects of lime, the losses from the soil, the kind to use, the method of application, etc., may be found in Circular No. 2, of the Iowa Agricultural Experiment Station.

Carbonates.—Acid conditions cannot exist in a soil which contains an abundance of carbonates. A test therefore of the presence of carbonates will give indications of the acidity of the soil. This test is based on the fact that acids attack carbonates with the liberation of carbon dioxide gas. Thus when soils containing carbonates are treated with hydrochloric acid there is a foaming or effervescence due to the rapid evolution of the gas. Conversely, if a soil is treated with hydrochloric acid and there is abundant foaming, evidence is at hand that carbonates are present in considerable amounts and the soil cannot be acid. If no foaming occurs then the soil may be acid or neutral.

To make the test, a little concentrated hydrochloric acid is poured on a small sample of moist soil in a clean dish or other receptacle. The extent of foaming is a rough indication of the amount of carbonates present in the soil.

A small amount of hydrochloric acid is all that is necessary to make a large number of tests and it may be easily secured at any drug store. Care should be taken that the acid is not brought into contact with the skin or clothing, as bad burns may result. If any of it is accidentally spilled it should be washed off immediately.

Even although negative reuslts are secured in the surface soil, tests should be made of the subsoil as the presence of carbonates there would be of considerable importance particularly in the case of deep-rooted crops.

Physical Conditions.—It is hardly necessary to emphasize the need of proper methods of tillage and cultivation to keep the soil in proper physical condition. Every farmer knows that he may conserve the moisture in his soil during a dry season by keeping it cultivated. The value of the proper preparation of the seed bed for all crops is also a matter of common knowledge. Proper plowing and disking, the killing of weeds, etc., are recognized as essential for satisfactory crop growth.

If the soil is open and porous, dries out too rapidly and is deficient in organic matter, as is often the case due to the "burning out" of this important soil constituent, then applications of barnyard manure or green manure should be made and lime applied. Not only is the physical structure of the soil improved by such treatment, but satisfactory conditions are offered for bacterial activity and there is consequently a sufficient production of plant food to insure good crop growth. The practice of green manuring to build up light soils cannot be too strongly emphasized.

Further information regarding green manure crops and methods of green manuring may be found in Circular No. 10 of the Iowa Agricultural Experiment Station. If the soil is heavy and cold and too much moisture is apt to be present, applications of lime will help, and proper drainage should be provided, preferably by the use of tile drains.

Presence of Plant Food.—The presence of available plant food in the necessary amount is one of the chief requisites for the best growth of crops. The amounts in available form of the various elements which are necessary for the growth of plants cannot be ascertained by chemical analyses but must be determined by field experiments such as are described farther on in this circular.

As has been pointed out, chemical analyses merely give indications of plant food deficiencies showing as they do the total plant food present.

Of the ten chemical elements which have been found to be essential for the growth of plants, five are supplied in sufficient amounts either from the air or soil, and need not be applied to the soil. These five elements are carbon, hydrogen, oxygen, sulphur and iron.

Nitrogen, phosphorus, potassium, calcium and magnesium may be lacking in soils, however, and if lacking, crop yields will be deficient. The two latter elements may be supplied by application of lime as calcic or dolomitic limestone, as has already been shown. If a soil is acid these elements are probably lacking.

Nitrogen.—A deficiency in nitrogen in a soil may be safely assumed if there is a lack of humus or organic matter present. Conversely, if a soil is dark in color it is well supplied with humus and will contain a supply of nitrogen, although the absence of satisfactory physical conditions may prevent the proper production of soluble nitrates. In such a case the adjustment of the physical conditions would prove more profitable than an application of sodium nitrate or any other nitrogenous fertilizer.

When soils are deficient in humus and nitrogen, applications of barnyard manure should be made and leguminous crops should be grown and used as green manure. Thus the organic matter and nitrogen content are both increased and the use of any other nitrogenous material is unnecessary for the production of common farm crops such as corn, oats and hay.

In some particular instances it might be worth while to make a small application of sodium nitrate to act as a stimulent to start and encourage the growth of a crop, but in general farming the use of commercial nitrogenous fertilizers on Iowa soils is unprofitable and unnecessary.

In market gardening, however, the application of nitrogenous or other artificial fertilizers is often of considerable value as here abundance of available plant food is necessary for forcing the crops.

Potassium.—The potassium content of most soils is considerably greater than the nitrogen or phosphorus content and there is much less danger of a deficiency of that element. That is the *total* amount of potassium in soils is large and if conditions are satisfactory for the transformation of the inactive into the active forms, applications of potassium fertilizers are hardly necessary.

Thus, if the humus content of the soil is high, its reaction is not acid, and if the proper methods of tillage are practiced, the bacterial activities which accomplish the solution of unavailable plant food constituents are facilitated and abundant potassium in proper form is offered to the crop. On soils, however, which show a deficiency in total potassium as is true of some poor, light soils, and many peat soils, especially those which are deep and are underlain with rock or sand, then an application of kainit, potassium chloride or potassium sulphate is to be advocated.

Phosphorus.—Phosphorus is the element which is most apt to be deficient in soils, not only in available form but also in insoluble compounds. According to many analyses there is less than 2,000 pounds of phosphorous per acre to a depth of 6⅔ inches in Iowa soils. Comparing this with over 30,000 pounds of potassium per acre to the same depth, it is evident that there is more danger of a phosphorous deficiency in the soils of the state.

This deficiency may be remedied by applying phosphorous to the soil in one of three forms: as fine ground natural rock phosphate, as steamed bone meal, or as acid phosphate. The latter material carries the phosphorous in a form immediately available for plant food, while in the other cases it occurs in an insoluble form and must be transformed to be available. The advocates of rock phosphate recommend, however, that it be applied with barnyard manure or green manure in order that bacterial activities may be enhanced by the latter materials and a more rapid transformation of the phosphorous compounds may occur. They contend also that as the soluble phosphates are transformed into an insoluble form in the soil, when not immediately assimilated, it is of no particular value to use the soluble form. While this change of the soluble form into insoluble does occur in the soil, one important point should not be overlooked—when the soluble material is added to the soil it is immediately dissolved and uniformly diffused through the soil.

Thus, after the change into insoluble form occurs the phosphate is in such physical shape that the bacterial action reproducing the soluble material is considerably greater than it is on the insoluble rock itself.

The rock is much cheaper and hence its use may seem advisable for financial reasons, but it is still a mooted question whether it is not more profitable to apply a soluble phosphate which unquestionably gives quicker returns and probably larger yields even although perhaps not as great percentage returns for the money invested, than to bury a large quantity of rock phosphate in the soil where it becomes slowly available.

The Station is not prepared to make definite recommendations on this point, and if they desire, farmers may test and compare the use of soluble and insoluble phosphorous fertilizers.

FIELD TESTS TO DETERMINE FERTILIZER REQUIREMENTS OF SOIL.

Farmers generally recognize the fact that soils differ in productive power. Sometimes soils which differ markedly from each other are found on the same farm or even in the same field.

In many cases the best soil on the farm is not as fertile as it should be, or some portion of the farm is notably unproductive. The farmer may desire, therefore, to test his soils in a practical manner in order to determine the effect of nitrogen phosphorus, lime or some other fertilizing material on the crop yields.

A fertility test that has been thoroughly tried out and that includes the application of substances supplying the elements of plant food which are apt to be deficient in Iowa soils, can be made by any thoughtful and careful farmer in the manner described in the following paragraphs:

Essentials in a Test. In the first place, the soil on which the experimental plots are to be located should be truly representative of the soil which it is proposed to test. If this is not the case the experiments will be of little value and they may even prove misleading and induce the land owner to adopt a system of management which will not give satisfactory results.

Again, the land which is devoted to the experimental plots should be kept, through the years, under a definite system of crop rotation. This is essential because a good rotation system is the basis of nearly every satisfactory soil management scheme. No particular type of rotation will, of course, be used in all sections of the state. Each farmer will be compelled to choose a rotation which he believes will give the best results under existing labor, market and soil conditions.

An excellent rotation for many sections of Iowa is the following:

First year—corn,
Second year—corn,
Third year—oats or wheat,
Fourth year—clover.

This rotation keeps one-half of the cultivated portion of the farm in corn. Many grain farmers favor this plan because corn is classed as the chief "money" crop in the state, while the live stock farmers prefer it because the corn crop most nearly meets the requirements of their feeding operations.

Below is given another good rotation which is especially adapted to the southern and western portions of the state:

First year—corn,
Second year—oats,
Third year—clover,
Fourth year—winter wheat.

This rotation includes winter wheat and therefore will prove particularly satisfactory to the large number of Iowa farmers who are now growing this crop much more extensively than in former years. Wheat is an excellent crop in a fertility test because it shows quite definitely in yield and quality the effect of soil treatment.

Either of the rotations referred to above may be extended to cover a five or six year period by seeding timothy with the clover and using the crop for pasture or meadow.

Locating and Marking Out the Plots.—After a rotation has been decided upon a series of ten plots should be marked off in that portion of the field which is most nearly representative of the soil which is to be tested.

The plots should all be of the same size. On the average, farm plots which contain one acre each will probably be found to be most satisfactory. They may, however, contain one-tenth, one-quarter or one-half of an acre each. The size of the plot must necessarily be determined by local conditions. A long and narrow plot is usually preferred; for example, a one-tenth acre plot which is two rods wide and eight rods long, and plots of other sizes in proportion. It is advisable to separate plots by a division strip seven feet wide. A strip of this width will accommodate two rows of corn, or one seven-foot drill.

A satisfactory plan for showing the location of each plot is worked out by setting a stake in the fence row adjacent to the fence, to mark the outside corner of the first plot. The second stake should then be set in line with the corner stake at such a distance as marks off the exact width of the first plot. The third stake should be placed seven feet beyond the second and thus show the location of the division strip between the first and second plots. By following this plan the exact location of each plot in the series may be shown.

A diagram drawn to scale on paper, should be made of the field plots which will show the location of the soil under investigation, the exact length and width of each plot, the width of the division strips, and the soil treatments. In connection with this diagram, there should be a record book, in which should be entered the dates of all operations and other items bearing upon the progress of the experiment. It is never advisable to trust to memory or to field stakes for the plan of the experiment.

Record of the Experiment.—The following form will be found convenient for keeping the final data of a field experiment which is continued from year to year:

FORM FOR PLOT EXPERIMENT DATA.

Plot	Soil Treatment Applied	Corn 1914	Corn 1915	Oats 1916	Clover 1917	Corn 1918	Corn 1919	Oats 1920
		Bushels or tons per acre						
1	None	[illegible]						
2	Manure	60						
3	Manure and lime	61						
4	Manure, lime and phosphorus	65						
5	None	48						
6	Crop residues	53						
7	Crop residues and lime	60						
8	Crop residues, lime and phosphorus	63						
9	Crop residues, lime, phosphorus and potassium	65						
10	None	[illegible]						

Given herewith is an outline of one of the simplest and most practical series of plot experiments, and it is recommended for all normal types of Iowa soils on which common farm crops are grown.

The series of soil treatments listed below really includes two distinct systems of farming. For instance, the treatments recommended for plots one to four inclusive, represent a live stock system of soil management, while plots five to eight inclusive represent a grain farming system. It is suggested that any farmer who does not wish to use as many as ten plots may confine his experiments to either the live stock or the grain system. If this is done, in some cases it may be advisable to include the treatment suggested for plot nine, and thus make the test include potassium.

PLAN FOR PLOT EXPERIMENTS.

a—Fertility test. b—Live stock system. c—Grain farming system.

		Plot No.	Soil Treatment
a	b	1	None.
		2	Manure.
		3	Manure and limestone.
		4	Manure, limestone and phosphorus.
	c	5	None.
		6	Crop residues.
		7	Crop residues and limestone.
		8	Crop residues, limestone and phosphorus
		9	Crop residues, limestone, phosphorus and potassium.
		10	None.

DETAILS OF EXPERIMENT PLAN.

The following explanations regarding the details of this plan for plots experiments in the field should be carefully noted:

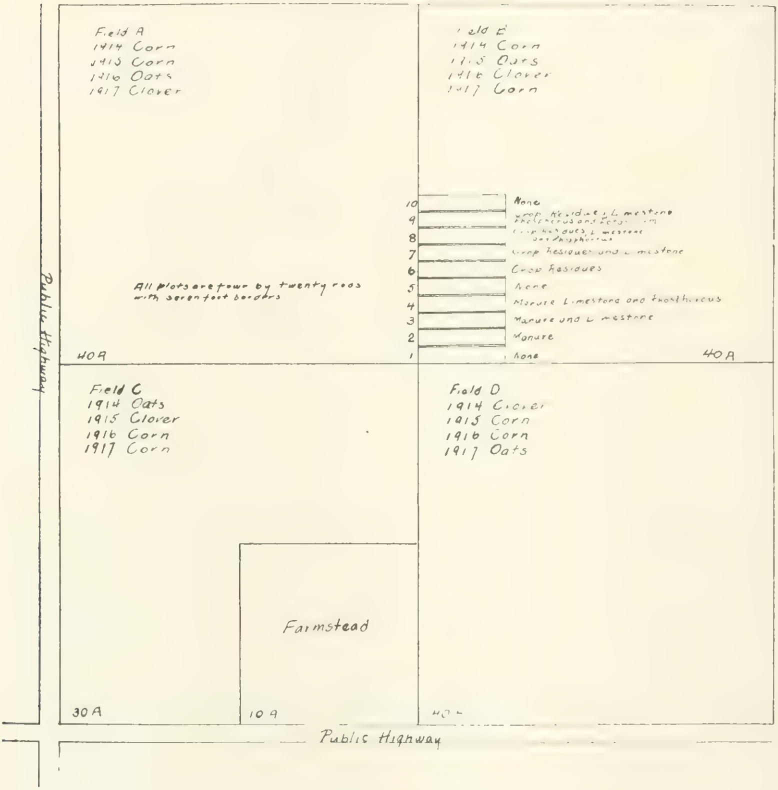
1. Manure of good quality, but fairly representative of that commonly produced on the farm, should be applied at the rate of eight or ten tons per acre, once in a four year rotation and in proportionate amounts for rotations which cover a shorter or longer period of time. When it is possible to do so, the manure should be put on the clover field and plowed under for corn the following year.

2. Ground limestone or limestone screenings should be applied to the land after it has been plowed, at the rate of two or three tons per acre, once in a four year rotation. The application of lime may be made at any convenient time of the year.

3. Phosphorus may be applied in finely ground rock phosphate, steamed bone meal or acid phosphate. The rock should be used at the rate of 2,000 pounds per acre, the steamed bone meal at the rate of 800 pounds

per acre, and the acid phosphate at the rate of 300 to 400 pounds per acre. These applications are made but once in a four year rotation.

4. The soil treatment recommended for plot 6 is designated as "crop residues." This treatment should be understood to mean that all products except the grain or seed which are sold in grain farming, shall be returned to the land and used as fertilizers. The details of this procedure are as follows:


Field A
1914 Corn
1915 Corn
1916 Oats
1917 Clover
Field B
1914 Corn
1915 Oats
1916 Clover
1917 Corn
All plots are four by twenty rods with seven foot borders
40 A
10 None
9 Crop Residues, Limestone Phosphorus and Potassium
8 Crop Residues, Limestone and Phosphorus
7 Crop Residues and Limestone
6 Crop Residues
5 None
4 Manure Limestone and Phosphorus
3 Manure and Limestone
2 Manure
1 None
40 A
Field C
1914 Oats
1915 Clover
1916 Corn
1917 Corn
Field D
1914 Clover
1915 Corn
1916 Corn
1917 Oats
Farmstead
30 A
10 A
40 A
Public Highway
Public Highway

SUGGESTIVE PLAN FOR LAYING OUT SOIL TEST EXPERIMENT PLOTS.

A. The clover should be clipped once or twice somewhat earlier than the first cutting for hay would ordinarily take place. The clipped material should be left on the land to be plowed under later.

Seed should be taken from the second crop if there is a yield which will justify the expense of the harvest. There is a strong demand in this state for clover seed of good quality and the prices are such as to make yields of even one or two bushels per acre quite profitable.

B. The corn stalks should be cut with a disk or stalk cutter and plowed under.

C. The threshed straw from small grain and clover should be returned to the land. This may be done at some convenient time. Often the straw is stacked in a feed yard for a few months and then applied as a fertilizer. This plan affords the work horses of the farm some feed during the winter and permits the straw to decay to some extent, putting it in better condition to handle.

5. It should be noted that neither crop residues nor any other fertilizing material are to be applied to plots 1, 5 and 10. All crops are to be removed from these plots and nothing returned.

6. Potassium may be applied in potassium chloride, potassium sulphate or kainit. The chloride and sulphate should be used at the rate of 200 to 300 pounds per acre, and the kainit at the rate of 1,000 pounds per acre, once in a four year rotation.

IMPORTANT POULTRY DISEASES.

BY D. E. SALMON, D. V. M.

(Farmers' Bulletin 530, U. S. Department of Agriculture.)

INTRODUCTION.

Fowls are liable to be affected by a considerable number of diseases, some of which spread rapidly through the flock and kill a large part of the birds. They may also be infested by various kinds of parasites, some of which live on the surface of the body and others in the crop, stomach, or intestines. These parasites are injurious because they take a part of the nourishment which should be used by the bird to put on flesh or to produce eggs, and also because by their movements and their biting they cause irritation and inflammation of the parts which they attack.

The contagious diseases, which are caused by animal and vegetable germs, and the weakness and loss of flesh caused by the larger parasites to which reference has just been made, are the most important conditions which the poultryman has to consider in the endeavor to keep his birds in a healthy condition. These germs and parasites should be kept out of the flock by suitable preventive measures, because disease may be avoided in this way much more easily and cheaply than it can be cured. The aim in studying the diseases of birds is, therefore, to learn how to prevent such diseases rather than how to cure them.

There are some cases in which medicines may be advantageously given or applied to fowls, but as a rule when a bird becomes sick it is better to kill it, because the cost of the medicine and the value of the time required to carry out the treatment are greater than the value of the birds which are cured. Another reason for killing sick birds is that they may be affected by a contagious disease which before it is recognized may spread to many other birds in the flock. A third reason for killing is the fact that a bird being sick indicates that it is more susceptible to disease than the other birds of the flock, and in order to establish a flock which is able to resist disease such susceptible birds must be weeded out.

The greater the number of birds which are kept upon any farm or plot of ground, and the more they are crowded together, the greater is the danger from contagion and parasites, and the more important are the measures for excluding, eradicating and preventing the development of these causes of disease.

HOW TO PREVENT DISEASE.

It is very important to start right and begin the flock with birds which are free from contagion and parasites, and to put such birds upon ground which is likewise free from these causes of disease.

The best way to accomplish this is to get eggs from a flock which has shown no indications of contagious disease for at least a year; avoid putting these eggs in packing such as chaff, oats or cut straw, which may be musty or moldy; wipe the eggs with a cloth wet in 70 to 80 per cent alcohol, and hatch them in a new or thoroughly cleaned incubator. The young chicks should be free from parasites and injurious germs of all kinds, and, to keep them in this condition, they should be put in new or clean brooders and permitted to run only upon ground where poultry has not previously been kept or which has not been used for poultry for several years.

Sometimes these directions cannot be followed in all respects. If all the available ground has been recently used for poultry, the fowls should be removed from that part which is to be used for the new flock, a good coating of freshly slaked lime should be applied to the entire surface of the ground, and a few days later it should be plowed. It may now be cultivated three or four times with intervals of a week and finally sowed with oats, rye, or other grain. In a few months the greater part of the germs will be destroyed, but it is best to leave the ground unoccupied by fowls until a winter has passed, as the freezing and thawing of fall and spring is more effective than either continued cold or warm weather.

If the eggs must be hatched under hens instead of in the incubator, the problem of starting a clean flock is much more difficult. Hens are liable to harbor parasitic worms in their intestines and to scatter the eggs of these worms with their manure wherever they go. They generally have lice and mites hidden in their feathers, which pass to the young chicks immediately after the latter are hatched; and they may be the carriers of disease germs even when they appear perfectly healthy. For these reasons the hens which are used for hatching should be selected from a flock that is known to have been free from other diseases than those caused by accidents for at least a year, and the individual birds of which are lively, vigorous, free from lice and mites, and producing a large number of eggs.

The hens selected for hatching should be well dusted with a good lice powder before they are given a setting of eggs; their nests should be perfectly clean and should be made with fresh, soft hay or straw; and there should be a box of road dust, or sifted hard-coal ashes of similar substance, under cover, where they can dust themselves whenever they come from the nest. When the young chicks are taken from the nest they should be carefully examined for lice. These parasites usually accumulate under the throat and upon the top and back of the head. If any are found, rub a little sweet oil, pure lard, or vaseline with the finger over the parts where the lice are. This kills the lice by obstructing their breathing pores and does not harm the chicks.

By beginning in this manner, a flock may be obtained which is practically free from disease germs and parasites, but in order to keep it in this condition the premises must be frequently cleaned and occasionally disinfected. There are a number of reasons for this. First, there are certain germs generally present in the intestines of healthy fowls and that are scattered with the manure, which when they are permitted to accumulate and become very numerous may cause outbreaks of disease; secondly, the germs of contagious diseases may be brought to the poultry yard by pigeons or other birds which fly from one poultry yard to another, or by mice or rats; thirdly, it is seldom that grounds are obtained for the poultry yard which are entirely free from infection with the eggs of parasitic worms and the spores of disease-producing microbes. To keep these germs and parasites from developing and increasing their numbers to a dangerous extent, the houses should be kept clean, the drinking fountains and feed troughs should be washed every day or two with boiling water or other disinfectant, and, if any lice or mites are found on the birds or in their houses, the roosts and adjoining parts of the walls should be painted with a mixture of kerosene, 1 quart, and crude carbolic acid or crude cresol, 1 teacupful (1 gill). Or the house may be whitewashed with freshly slaked lime or sprayed with kerosene emulsion. The fowls should be dusted every three or four days with lice powder until these parasites entirely disappear, which should be within two weeks, if these measures are properly applied.

LICE PPOWDERS AND THEIR APPLICATION.

Very good lice powder may be made at little cost by mixing fine road dust, 2 quarts, and tobacco dust, 1 pint. In place of road dust, anthracite coal ashes well sifted may be used, and Persian insect powder or flowers of sulphur may be substituted for the tobacco dust. The important point is that all the ingredients should be in the form of a very fine dust.

A powder much recommended is made by mixing 3 parts gasoline and 1 part crude carbolic acid (90 to 95 per cent pure) and adding to this mixture slowly, while stirring enough plaster of paris to take up all the moisture. It takes about 4 quarts of plaster of paris to 1 quart of the liquid. When enough plaster is added the mixture should form a dry, brownish powder. Those who make this powder should remember that gasoline is very inflammable and may cause an explosion if there is any fire near; also that crude carbolic acid of this strength may burn the hands, face or eyes if it comes in contact with them.

Lice powders are best applied by putting them into a tin can having a perforated top like a pepper box, but with larger holes. A newspaper is spread on the floor to catch the surplus powder, the fowl is held by the legs, head downward, so that the feathers will loosen up and fall away from the body, and then the powder is dusted thoroughly through the feathers, especially under the tail and wings and about the neck and head. By rubbing the feathers slightly with the hand the powder will penetrate and form a coating over the skin, which is destructive to both lice and mites.

It is possible and practicable to keep a flock of poultry absolutely free from lice and mites, and this should be the aim of everyone who is endeavoring to estabish a successful poultry industry.

DISINFECTANTS AND THEIR APPLICATION.

Good disinfectants destroy the germs of contagious diseases, the external parasites such as lice and mites, and the embryos of the instestinal worms. They should be thoroughly applied to the interior of the houses, worked into all the cracks and crevices, spread over the ceiling and the floor, the roosts, dropping boards, and nest boxes. At the same time, the feeding and drinking troughs should be disinfected by pouring boiling water into them and afterwards drying them in the sun. The disinfectants are most easily applied to the walls and ceilings with a spray pump or brush. As it is difficult to keep them from coming into contact with the face and hands the more harmless of these mixtures should generally be used. Ordinarily limewash made from freshly slaked lime is excellent and its properties are well known to all. In the case of an actual outbreak of virulent disease, it is well to add to the limewash 6 ounces of crude carbolic acid to each gallon, to increase its activity as a disinfectant.

The kerosene emulsion which is frequently used to destroy lice and mites may readily be converted into a disinfectant. To make the emulsion shave ½ pound of hard laundry soap into ½ gallon of soft water and boil the mixture until all of the soap is dissolved, then remove it to a safe distance from the fire and stir into it, at once, while still hot, 2 gallons of kerosene oil. This makes a thick, creamy emulsion, or stock mixture. When it is to be used for killing lice in the houses 1 part of this emulsion is mixed with 10 parts of water. When it is to be used as a disinfectant add 1 quart of emulsion to 10 quarts of water and stir well; then add 1 pint crude carbolic acid or crude cresol and again stir until all is well mixed.

One of the best disinfectants is the compound solution of cresol, which may be purchased ready for use. It contains 50 per cent of cresol, and 1 pint of it added to 10 quarts of water makes a solution of the proper strength to apply to the houses or to spray over the ground. A 5 per cent solution of carbolic acid (1 pint carbolic acid to 10 quarts of water) is about equally efficacious. The choice between the two is a matter of convenience.

CHOLERA AND CHOLERA-LIKE DISEASES.

There are several diseases which have been investigated and described as different because the bacteria which cause them differ in some of their characteristics. The symptoms and the changes which are seen after death are so nearly identical that it is only by studying the bacteria that any one of these diseases can be distinguished from the others. The treatment applicable to one is equally applicable to the others. For the practical purpose of combating them in the poultry yard we may therefore group these diseases together.

Causation.—There are certain germs (bacteria) which are nearly always found in the intestines of healthy fowls which have more or less power to produce disease, but which the sound, healthy fowl is able to resist under favorable conditions. If these germs are inoculated into canary birds, they produce a fatal disease, because the canary does not have the power to resist them. If inoculated from one canary to another three or four times, these germs have their disease-producing powers so increased that they are able to kill adult fowls. When the resisting powers of fowls are diminished by exposure to cold, hunger, thirst, and exhaustion, as occurs during long shipments by rail, these germs may also cause disease in the fowls. In some countries the sickness which develops from these conditions is called "the transportation disease."

It sometimes happens that this disease develops in poultry yards which are not kept clean, possibly because of the large numbers of these germs which are taken into the bodies of the birds, but probably because they have acquired greater disease-producing powers from growing in warm manure. When they begin growing in the tissues of fowls they soon increase their virulence, and the disease which they cause may rapidly spread from fowl to fowl until the greater part of the birds are dead.

The typical germ of fowl cholera has adapted itself more completely than have these common germs to the conditions of life within the fowl's body, so that it is strictly parasitic, and is only obtained from fowls which are affected or have been affected with the disease. That is, birds only contract true fowl cholera by exposure to contagion that originates in other birds that have or have had the disease.

The cholera-like diseases may, therefore, either develop in the poultry yard from insanitary conditions, or they may be introduced by contagion carried by new birds which are added to the flock, by birds which have been to exhibitions, by wild birds which fly from one poultry yard to another, or by various animals, such as dogs, cats, rats, etc. Birds which recover from the disease may sometimes carry the germs and disseminate the contagion for six months or a year after they are apparently well.

Symptoms.—The first symptom is a yellowish coloration of that part of the excrement which is secreted by the kidneys and which in health is nearly or perfectly white. Soon there is diarrhea, the droppings consisting of the whitish or yellowish secretions of the kidneys mixed with considerable thin mucus and a small quantity of intestinal contents which may have a yellowish, brownish, or greenish color. There is considerable fever, and soon after the bird is attacked it loses its lively appearance, separates itself from the flock, and appears dull, dejected, and sleepy. It no longer searches for food, but sits with the head drawn down to the body or turned backward and resting in the feathers about the wing. The plumage soon loses its brilliance, the wings droop, the appetite is diminished, and the thirst increased; the comb and wattles may be a dark bluish red from engorgement with poorly oxygenated blood, or they may be pale and bloodless on account of the congestion of the internal organs, especially the liver.

The affected birds soon become very weak, drowsy, and often sleep so soundly during the last day or two of their lives that it is difficult to arouse them. If made to move they stagger forward for a few steps only in an uncertain manner and with dragging wings. The crop is generally distended with food and apparently paralyzed, and the feathers about the vent are soiled and sometimes pasted together with excrement.

As death approaches, the weight and the strength of the bird rapidly diminish, it breathes with difficulty, sits with the beak open, and the breathing may be heard at some distance. Finally the weakness is such that the beak is rested on the ground, and a little later the bird falls over on one side, makes a few convulsive movements, and dies.

In the very acute cases no symptoms are seen; the birds may be found dead under the roosts, or they may fall at the feed trough and die in a few minutes.

The cholera-like diseases often occur in a chronic form, which may follow an acute attack of the disease or may be chronic from the first. This form is characterized by a continually increasing weakness, loss of weight, bloodlessness, and, finally, an exhaustive diarrhea. Sometimes one or more joints of the wings or feet swell, the birds become very lame, and later the swellings break and discharge a creamy or cheesy mass which contains large numbers of the germs.

These diseases may destroy the greater part of a flock in a week and then disappear, or they may linger for months, only occasionally killing a bird. The time between exposure to the contagion and the appearance of symptons is from 2 to 5 days, and the duration of the disease is from 24 hours to 10 days.

The most characteristic changes seen after death are red spots on the surface of the heart, which give it the appearance of having been sprinkled with blood, congestion and enlargement of the liver, and swelling of the spleen.

Treatment.—The best method of treatment is to kill the sick fowls in such a way as not to spread the infection with their blood, burn or deeply bury their bodies, separate the remaining birds into small lots of 3 to 5 each, so that when a bird is attacked there will not be more than this number exposed to it; then watch each lot so as to remove any sick bird as soon as symptoms appear. Disinfectants should be used in the houses and yards where the disease first appeared, and also in the small pens in which the separated birds are kept.

If it is deemed advisable to treat the sick birds, they may be given 2 to 4 teaspoonfuls of a one-half per cent carbolic solution twice a day. This is generally made by adding 1 part of the 5 per cent solution to 9 parts of water. They should also be given buttermilk to drink.

Generally the best results are obtained by killing the sick birds and separating the well ones into small pens and giving to each one 2 doses of the carbolic acid solution daily for three or four days. The houses and yards should be thoroughly cleaned and disinfected before the fowls are returned to them, and should be kept very clean for some weeks afterwards to guard against a recurrence of the disease.

ROUP OR CONTAGIOUS CATARRH.

The disease called "roup" by poultrymen is a contagious catarrh, closely resembling the more malignant forms of influenza in the larger animals and in man. It attacks principally the membranes lining the eye, the sacs below the eye (infra-orbital sinuses), the nostrils, the larynx, and the trachea. It is attended with high fever and is very contagious.

Causation.—Roup appears to be a strictly contagious disease; that is, one which arises only, so far as known, by contagion from other diseased birds. The nature of the microbe which constitutes the virus is not known. The contagion is generally brought into the poultry yard by infected birds. Sometimes these are birds which are purchased from other flocks in which the disease exists; sometimes they are birds of the home flock which have been to exhibitions and there exposed to sick fowls; and sometimes they are wild birds or pigeons which fly from one poultry yard to another.

The saliva and the discharge which escapes from the nostrils carry the contagion, and soon contaminate the drinking water and feeding troughs so that all the fowls are infected. Even the flocks in adjoining yards are infected by the particles of mucus projected into the air when sneezing, or by the contagion carried on the feet of persons, animals, or small birds that pass from one yard to another.

Delicate birds are inclined to severe attacks and to recover slowly, and often a chronic condition persists for a long time. Birds so affected may carry and spread the contagion for a year or more and become the cause of new outbreaks of the disease.

Symptoms.—The symptoms first seen are very similar to those of an ordinary cold, but there is more fever, dullness, and prostration. The discharge from the nasal opening is at first thin and watery, but in two or three days becomes thick and obstructs the breathing. The inflammation, which begins in the nasal passages, soon extends to the eyes and to the spaces which exist immediately below the eyeballs (infra-orbital spaces). The eyelids are swollen, held closed much of the time, and may be glued together by the accumulated secretion. The birds sneeze and shake their heads in their efforts to free the air passages from the thick mucus. The appetite is diminished and the birds sit with their heads drawn in, wings drooping, and having a general appearance of depression and illness.

When the inflammation reaches the spaces or sacs beneath the eyes, this causes the formation of a secretion very similar to that of the nose, and as this becomes thick it collects, distends the walls of these spaces, and produces a warm and painful swelling, which is seen just below the eyes and may reach the size of a hickory nut. This swelling presses with much force on the eyeball, which is displaced and more or less deformed; and in extreme cases even the bones of the head may give way before it.

The closure of the eyes prevents the badly affected birds from finding food; the accumulation of mucus in the nostrils completely obstructs these passages, so that the beak must be kept open in order to breathe; the obstruction of the windpipe and the smaller air tubes causes loud breathing sounds and difficult respiration.

In the severe and advanced cases the birds sit in a somnolent or semi-conscious condition, unable to see or to eat; their strength is rapidly exhausted, and many of them die within a week or ten days. A part of the affected individuals recover, but others continue weak and have a chronic form of disease for months, during which time they continue to disseminate the contagion.

This disease is distinguished from diphtheria by the absence of the thick, tough, and very adherent newly formed membranes (false membranes) in the nostrils, mouth, and throat which are characteristic of the latter. There may sometimes be a deposit of yellowish material on the walls of the mouth and throat, but it is easily broken up and removed.

Treatment.—The medical treatment of this disease may be very successful if properly applied. The sick birds should be removed from the flock and put in a warm, dry, and well-ventilated room which is free from drafts of air. The affected mucous membranes should then be treated by applying antiseptic and healing mixtures. The best method is to use a good spraying apparatus; but, lacking this, a small syringe, an oil can, or even a medicine dropper can be made to answer the purpose.

It has been recommended that the bird's head be plunged into a basin or bowl of the mixture and held there a few seconds, but not long enough to cause suffocation.

The remedies most suitable for such treatment are: Boric acid, 1 ounce; water, 1 quart. Or, permanganate of potash, 1 dram; water, 1 quart. Or, boric acid, 1¼ ounces; borate of soda, ½ ounce; water, 1 quart. Or, peroxide of hydrogen, 1 ounce; water, 3 ounces.

Where the inflammation has progressed to the eye, excellent results have followed the use of argyrol. One or two drops of a 15 per cent solution is introduced between the eyelids twice daily for a period of several days.

Before applying these remedies it is well to wash the eyes and mouth with warm water containing 1 teaspoonful of common salt to a quart, using a pledget of absorbent cotton and rubbing gently, while at the same time pressing and massaging about the nostrils and under the eyes to loosen the accumulated secretion. If there is much swelling under the eyes, it must be carefully opened with a sharp, clean knife, all the secretion removed, and the cavity washed with one of the above-mentioned solutions. A pledget of cotton moistened with the solution may be left in the opening for an hour or two, or it may be dusted with iodoform powder. When the swelling under the eye is not very large or hard, it may often be reduced by massaging it in such a manner as to press the contents toward the nostril. After treating the birds in this manner the head should be well anointed with pure vaseline or with camphorated vaseline.

The treatment of sick birds requires much time and patience, and there is always the risk that they may carry the contagion for several months after they are apparently well. Prevention is therefore much more profitable. To accomplish this, measures should be continually enforced which will exclude contagion of all kinds. New birds and those which have been to exhibitions should be isolated and kept under observation for two weeks before they are put with the flock, and all animals and wild birds excluded, so far as possible. The houses should be kept clean and dry and occasionally disinfected. If the disease appears notwithstanding these precautions, isolate the affected fowls at once at a distance from the well ones, and apply disinfectants freely about the houses and runs. Also place sufficient permanganate of potash in all drinking water to give the latter a deep red color. If the disease proves of a severe type, it is often better to kill the entire flock, and after a thorough cleaning and disinfection of the premises to begin with new birds. This radical method avoids the retention of birds which may harbor the contagion and cause the development of subsequent outbreaks.

DIPHTHERIA.

Diphtheria is a disease having some of the symptoms of a cold, or of the contagious catarrh described above, but which differs from these and is especially characterized by the development of false membranes on the mucous surface of the nostrils, eyes, mouth, throat, and even of the smaller air tubes. The false membranes are new growth of a grayish or yellowish color, very tough, and difficult to remove from the tissues beneath them.

Causation.—The diptheria of fowls is caused by a filterable and invisible virus, and therefore is entirely distinct from the diptheria of children, which is caused by a well-known bacillus. The disease is strictly contagious, and probably never develops as the result of exposure to cold and dampness, although these conditions favor its spread and tend to increase its malignancy. The contagion is generally introduced by newly purchased birds or by birds which have been to exhibitions and there exposed to sick fowls. Sometimes it is carried by pigeons and other small birds. Very often an outbreak is caused by contagion from an apparently well bird which had the disease and recovered months before.

The contagion is spread through the mucus which escapes from the nostrils, or that which is forced out in the acts of sneezing or coughing, in the saliva, the secretions of the eyes, and also the excrement. When the disease appears in a flock the floors of the houses, the drinking cups, and feeding troughs are at once infected by the diseased birds, and the well ones soon contract the disease from the contaminated water and food. It is consequently but a few days before a large part of the flock shows symptoms, though some are much more severely affected than others.

Symptoms.—Diphtheria begins as a local irritation or inflammation at some point on the internal surface of the mouth, throat, nostril, or eyes.

At this time the general health is not yet affected, and there is nothing but the diphtheritic deposit to indicate that the bird has been attacked. This deposit is at first thin, yellowish or whitish in color, and gradually becomes thicker, firmer, and more adherent, so that considerable force is required to remove it. The mucous membrane beneath the deposit is found, when the latter is removed, to be inflamed, ulcerated, and bleeding, but it is soon covered by a new deposit. This deposit is called a false membrane, and when it is situated where the air passes over it in breathing it dries, becomes uneven and fissured, and its color changes to a dark brown.

With pigeons the deposit is more friable and easily removed, and the mucous membrane beneath it is reddened but not ulcerated.

While the false membranes over the parts first affected are becoming thicker, the inflammation extends to the adjoining surfaces, and new diphtheritic centers develop, uniting with each other until the cheeks, the tongue, the palate, the throat, and the inside of the nostrils are covered. Very often the inflammation extends from the nostrils to the eyes and the sacs beneath the eyes, and sometimes it penetrates the air tubes to the lungs or the gullet to the crop.

This extension of the disease leads to the appearance of other symptoms. The inflammation in the nostrils causes sneezing and the escape of a thin, watery secretion from the nasal openings; the thick false membranes fill up the nasal passages and the throat and obstruct the breathing; a thick, viscid secretion collects on the eyelids and glues them together; the sacs under the eyes fill up, and swellings are caused which disfigure the head; the poison which is produced by the growth of the microbe beneath the false membranes is absorbed and affects the nervous system, causing dullness, depression, and sleepiness. The affected bird stands with the neck extended and the beak open to facilitate the entrance of air into the lungs, and from the corners of the mouth there hang strings of thick, tenacious, grayish mucus. At this time, which may be three to five days from the appearance of the first symptoms, the condition is very serious. Swallowing is difficult or impossible; the breathing is so obstructed that hardly sufficient air can be inhaled to support life; the head is swollen; the eyes are nearly or entirely closed; the feathers of the head, neck, and breast are foul with the decomposing secretions from the nostrils and mouth; there is considerable fever; an exhausting diarrhea sets in; there is rapid loss of weight; the comb and wattles become pale and cold; the temperature of the body finally sinks below the normal; and death soon follows.

When false membranes form in the gullet, crop, and intestines, there is a rapid aggravation of the symptoms, an intense diarrhea, and the escape of blood with the droppings. This type of the disease is more frequent with water fowl than other birds. Some fowls in a flock are resistant, and after a few days of illness make a rapid recovery. Others remain dull, weak, and thin in flesh, and may have more or less catarrh and difficulty of breathing for a long time.

The period between exposure to the contagion and the appearance of the first symptoms varies from 3 to 15 days; the duration of the disease varies from 2 to 3 days to as many weeks in the acute cases, while chronic form may continue for several months. The average death rate is from 50 to 60 per cent of the flock.

Treatment.—The treatment of fowls affected with diphtheria requires much time and patience, and as a rule does not pay. It is better to kill those affected, bury or burn their carcasses, disinfect the poultry houses, and in that way eradicate the contagion as soon as possible, even if the whole flock must be sacrified.

If it is decided to treat the sick birds, they should be removed from the flock and put in a comfortable, well-ventilated room which may be easily disinfected. Make a solution by dissolving 2 drams of common salt in a quart of warm water, and with a soft brush or a pledget of absorbent cotton dipped in this solution gently brush or rub the false membranes until they are disintegrated and loosened from the underlying tissues. Sometimes it is necessary to scrape them off with a spoon or knife, but it must be done carefully so that bleeding will not be caused or the sensitive tissues injured. After the false membrane has been removed, moisten a pledget of absorbent cotton in a 2 per cent solution of lysol or carbolic acid and apply it for a minute or two to the diseased surface. A solution which gives good results is made by dissolving 35 grains of chlorate of potash and 2 grains of salicylic acid in 1 ounce of water adding 1 ounce of glycerin. This may be applied to the diphtheritic spots three or four times a day with a pledget of absorbent cotton.

Another solution which is often recommended is made by dissolving 16 grains of permanganate of potash in half a pint of water. A very good and also a harmless solution consists of 1½ ounces of boric acid and 1 ounce of powdered borax (biborate of soda) dissolved in 1 quart of water and applied warm. The two last-mentioned solutions may be used to wash the eyes or may be injected into the nostrils. Argyrol may also be used as recommended in contagious catarrh.

If large swellings appear beneath the eyes, they should be opened with a clean, sharp knife, the contents of the cavity removed, and the space frequently washed with the boric-acid-borax solution mentioned above.

Many persons think that the treatment is not complete without fumigation. To accomplish this vaporize tar water or oil of turpentine in the room by dropping it slowly on a hot brick or stone after the doors and windows have been tightly closed. If the operator remains in the room with fowls, he can easily determine when as much of the remedy has been vaporized as can safely be used and should stop at that point. The tar water is prepared by stirring two tablespoonfuls of wood tar in a quart of warm water and letting the mixture stand for a few hours.

The cages and the room in which the sick birds are kept should be disinfected daily with a 5 per cent solution of cresol or carbolic acid.

BIRD POX (CHICKEN POX).

Bird pox is a condition characterized by an eruption of nodules varying from the size of a millet seed to that of a pea, which occurs on the comb, wattles, ear lobes, and less frequently on the skin of other parts of the body. It is more frequent and more malignant in warm than in cold climates, but occurs in most parts of the world. Recent investigations make it probable that it is caused by a filterable virus which identical with that of diphtheria. As the symptoms of the two conditions are generally quite distinct they are here described separately.

Causation.—Bird pox, so far as known, does not originate in any other way than by contagion. It seems to be produced by virus from fowls or pigeons affected with either the eruption of bird pox or the false membranes of diphtheria. Experiments have shown that both pox and diphtheria are easily inoculated from fowl to fowl and from pigeons to fowl, but the inoculation of pox from fowl to pigeon has proved very difficult and that of diphtheria impossible. The contagion is believed to exist in the blood as well as in the nodules which appear upon the skin.

The disease is generally introduced by new birds which are put into the flock or by exhibition birds which return infected. Probably it is often brought by pigeons, sparrows, and other birds which fly from one yard to another. The inoculation of the comb and wattles appears to occur by rubbing these parts with the infected feet or by being injured with the infected beaks of other birds.

The virus is quite resistant and requires thorough disinfection for its eradication.

Symptoms.—The eruption appears as round, oblong, or irregularly shaped nodules from the size of a pinhead to that of a pea or a hazelnut. They are seen especially about the beak and nostrils and on the comb, the eyelids, and wattles, and the ear lobes. In some individuals, and particularly in pigeons, the eruption is more generalized and is found on the skin of other parts of the body, as the neck, under the wings, on the rump, and about the cloaca. Here the nodules may become larger than on the head.

The nodules begin as small red or reddish-gray deposits with a shiny surface and generally enlarge, while the color changes to a yellowish, brownish, or dark brown and the surface dries and decome shriveled, uneven, and warty in appearance. Owing to the number of nodules and the extension of the inflammation, large patches of skin become thickened and covered with hard, dry crusts, closing the nasal openings or the eyelids and making it difficult even to open the beak.

In the milder cases the eruption is limited to the head, the nodules are distinct and small, and the general health of the affected bird does not suffer. The nodules soon dry, heal, and shrink; the crusts become loosened and fall off, and there is rapid recovery. In the more malignant cases the eruption is generalized over the surface of the body, the nodules are larger, and there is a diffuse inflammation and thickening of large areas of skin. If the crusts are rubbed or scratched off by the fowls, there occurs from the ulcerous surface a discharge at first watery, but later thick, yellowish, and viscid, which soils the feathers and, if abundant, gives off a disagreeable odor. This type of the disease is accompanied by fever, rapid loss of flesh, and prostration, and frequently causes the death of the victim. In the most malignant cases, especially with pigeons, the eruption extends to the mucous membranes of the eyes, nostrils, and mouth, causing a diphtheritic inflammation that is generally fatal.

Treatment.—The mild cases of this disease may be successfully treated by simple local applications. The crusts on the nodules are softened with carbolated ointment, glycerin, or oil, and after an hour or two removed by washing with warm water containing a little soap. The denuded tissue is then treated with a 2 per cent solution of creolin or lysol, or with a saturated solution of boric acid. Some prefer carbolated oil or carbolated ointment to watery solutions; others apply tincture of iodine. If there is much inflammation of the eyes, apply frequently with a medicine dropper or a pledget of absorbent cotton a solution made by dissolving 1½ ounces boric acid and 1 ounce biborate soda in a quart of warm water. This solution may also be applied to the inflamed skin either before or after the crusts are removed.

As this disease is contagious, the houses, drinking vessels, and feed troughs should be kept disinfected during the outbreak and for some days after all the birds have apparently recovered.

BLACKHEAD (ENTERO-HEPATITIS).

This is a disease of the intestines and liver, which is most frequent with and most injurious to turkeys, but which also attacks common fowls. In the course of this disease the head often becomes dark colored or nearly black, and for that reason it is popularly known as "blackhead," although it is only the internal organs that are attacked by the parasitic microbe. The cause of the disease is a protozoal organism called *Amoeba meleagridis*, the ameba of turkeys. The contagion is widely disseminated and in some localities has made the production of turkey nearly impossible.

Causation.—The ameba leaves the bodies of the sick birds with the excrement and infects other birds by entering the digestive organs with the food and drink. It passes along the alimentary canal until it arrives at the two blind pouches or lateral extensions called the ceca, where it begins its growth and produces the first signs of disease. Here it penetrates the lining membrane, increases rapidly in numbers, and sets up an inflammatory process which leads to a great thickening of the intestinal wall and to the filling up and obstruction of the tube with an accumulation of yellowish white or grayish cheesy material that is deposited in concentric layers.

The changes which are almost constantly found in the liver are explained by the assuming that the microbes are carried by the blood from the diseased ceca to the liver, and are there deposited at different points, where they multiply and spread in all directions. In this way are formed the numerous centers of disease which appears on the surface of the liver as yellowish spots, but which when cut across are seen to be irregularly spherical in shape. The ameba are liberated in large numbers both in the ceca and in the liver, are mixed with the intestinal contents, and are distributed with the droppings.

There is some difference of opinion as to whether the ameba is ever present within the egg of diseased turkeys, but the indications are that the infection is not carried in this way. It no doubt often exists on the outside of the shell, from contamination when the egg passes through the cloaca, and for this reason the eggs should be carefully cleaned before they are put under the sitting hen or into an incubator.

An important recent conclusion is that common fowls harbor this parasite, although they rarely suffer sufficiently from its attacks to show marked symptoms of disease. They scatter the contagion constantly, however, and young turkeys, being more susceptible, contract a fatal form of the disease and are nearly all destroyed by it. For this reason it is very difficult to raise turkeys on or near grounds where there are common fowls.

Symptoms.—The symptoms of blackhead are most frequently seen in young turkeys, commonly called "poults," which are from 2 weeks to 3 or 4 months old. When young poults are infected experimentally by feeding them diseased livers they usually die in about two or three weeks, but when infected naturally they generally take in a smaller quantity of contagion and live a longer time.

The affected birds at first appear less lively than usual, are not so active in searching for food, and when fed show a diminished appetite. Diarrhoea is a nearly constant sypmtom, being due to the inflammation of the ceca. As the disease progresses there is more dullness and weakness, the wings and tail droop, and there is often the peculiar discoloration of the head which led to the disease being called "blackhead." There is increasing prostration and loss of weight; the affected birds, instead of following their companions, stand about in a listless manner, indisposed to move and paying little attention to what occurs about them.

The greater part of the affected poults die within three or four months after hatching; but with some the disease takes a more chronic form and does not cause death for a year or more. Nearly all die sooner or later from the effects of the disease, but in a small proportion of these there is healing and recovery.

The finding after death, in young turkeys, of the diseased and thickened ceca, plugged with cheesy contents, together with the yellowish or yellowish-green spots in the more or less enlarged liver are sufficient indications to warrant a diagnosis of blackhead.

Treatment.—The treatment of diseased birds has not given satisfactory results. The remedies most often used are sulphur 5 grains, sulphate of iron 1 grain; or benzonaphthol 1 grain, salicylate of bismuth 1 grain; or sulphate or iron 1 grain, salicylate of soda 1 grain. These remedies should be preceded and followed by a dose of Epsom salts (10 to 35 grains), or of castor oil (½ to 3 teaspoonfuls). Fifteen grains of catechu to the gallon of drinking water may also have a beneficial effect. It seems clear, however, that it does not pay to doctor the sick poults and that the only hope of success at present is in preventing their infection.

The measures of prevention which have been suggested are (1) obtaining eggs from birds believed to be healthy; (2) wiping the eggs with a cloth wet with alcohol (80 to 90 per cent) before they are placed in the incubator or under the hen for hatching, to remove any contagion that might be on the shell; (3) hatching in an incubator, or at least removing the eggs from under the hen a day or two before hatching would occur, wiping with alcohol, and finishing in an incubator, in order to avoid exposing the poults to the hen; (4) placing the young poults on ground at a distance from all other domesticated fowls and which has not recently been occupied by other fowls; (5) excluding so far as possible pigeons, other wild birds, and rats and mice from the houses and runs occupied by the turkeys; (6) the frequent disinfection of the houses, feed troughs, drinking fountains, etc.; (7) the immediate killing of diseased birds and the destruction of their bodies by fire.

These radical measures are necessary, and in sections of the country which are not too intensely infected they will make it possible to carry on the turkey industry successfully. However, it must be admitted that up to the present blackhead has proved to be the most difficult of all diseases to prevent or eradicate.

The destruction of the contagion, after it has been introduced into a poultry yard, has also been found difficult or impossible. Some have proposed to dig up and burn the surface soil to a depth of several inches, which might be done with small yards but is impossible with large ones. In most cases the poultryman must be contented with the application of a layer of freshly burned lime that has been carefully slaked to a fine, dry powder. After a few weeks this ground should be plowed and another layer of lime applied. The manure which has accumulated should be burned or mixed with lime and plowed into the ground of some distant fields. The walls and floors of the buildings should be covered with a good limewash containing 6 ounces of carbolic acid to the gallon. The fences should receive a coat of limewash. The feeding troughs and drinking vessels should be put into a kettle of boiling water for half an hour. Troughs too large for this should be burned and replaced by new ones. After these measures are adopted, the longer the premises are left vacant the more likely is the contagion to be completely destroyed. The frezing and thawing of winter and spring will be found of great assistance. In beginning with a new flock the precautions already mentioned must be adopted to prevent the reinfection of the premises.

TUBERCULOSIS.

The tuberculosis of fowls is a chronic contagious disease, characterized by the development of nodules called tubercles in various organs of the body, but most frequently in the liver, spleen, and intestines. The disease is caused by a bacillus which differs somewhat in its manner of growth in artificial cultures from the bacilli which cause the tuberculosis of people and of cattle. The tuberculosis of fowls is readily communicated to most species of birds and to several species of mammals, but it is almost impossible to communicate the tuberculosis of man and cattle to fowls. Parrots and the small cage birds are very susceptible to human tuberculosis, however, and are often affected by it.

Causation.—Tuberculosis is generally brought into the poultry yard with fowls that are purchased from infected flocks or with the eggs of diseased birds that are obtained for the purpose of hatching. If the disease exists in neighboring flocks the contagion may be carried by small birds or animals passing from one yard to another. A peculiarity of the tuberculosis of birds is that the liver and intestines are nearly always very severely affected, and that as a consequence the bacilli are very numerous in the intestinal contents and are scattered with the droppings everywhere that the fowls go. The introduction of a single diseased bird may, therefore, cause the infection of the greater part of the flock in a few weeks. In the same way, when wild birds contract the disease the bacilli are carried and deposited in all the yards which they visit.

The eggs of diseased birds frequently contain the bacilli, as has been proven by the inoculation of and transference of the disease to rabbits and guinea pigs. The young chicks hatched from such infected eggs are diseased when they leave the shell and, of course, soon infect the poultry with which they run. Moreover, since the sterile incubated eggs are often fed to chickens, it is clear that even the eggs which do not hatch may introduce the contagion unless they are cooked before feeding.

Pigs, cats, rats, and mice are especially liable to be infected with fowl tuberculosis from eating the carcasses of birds which have died, and these animals serve to keep up the contagion and may communicate it to other fowls. Even calves and colts are sometimes found suffering from this form of tuberculosis.

Symptoms.—These are generally not observed in the internal tuberculosis of fowls until the disease has reached an advanced stage of development. They begin with gradual loss of weight, wasting of the muscles, paleness of the comb, and toward the end dullness, sleepiness, and diarrhoea. Very often there is at the same time a tubercular inflammation of the joints and of the sheaths of tendons, which is revealed by lameness, swelling of the joints and legs, and sometimes by the formation of hard, external tumors of considerable size. Occasionally the skin over the swollen joints breaks, the interior of the joint is ulcerated, and a small quantity of pus containing large numbers of tubercle bacilli is discharged. Swellings and bony enlargements of the joints with fowls are invariably suspicious, and their nature should always be investigated by killing the bird and examining the liver and spleen to determine if these have any whitish or yellowish spots on their surface which when cut into prove to be tubercular masses.

Treatment.—There is no treatment that will cure fowls which have been attacked with tuberculosis. When the disease is discovered the effort should be to eradicate it at once by killing off the whole flock and thoroughly disinfecting all the houses and runs.

As the great majority of the birds will probably be more or less affected, the chances are that any which are saved will have diseased livers and intestines, from which the bacilli will escape and keep up the infection of the flock and the runs. The danger of this is so great that no attempt should be made to keep any of the fowls that have been exposed to the contagion, no matter how valuable they may be. The bodies of the birds which have died or are killed, as well as all the accumulated manure, sweepings and scrapings of the poultry houses, should be completely destroyed by fire.

So far as known there is no danger of communicating the disease to man by eating the cooked flesh of tuberculous fowls. In most cases, however, the diseased birds are so emaciated and their general health so affected by fever and diarrhoea that their flesh is not fit for human consumption. It is better in all cases to burn the carcasses of the birds in which tubercular nodules are found, and thus avoid all danger of the disease being communicated to either man or animals.

ASPERGILLOSIS.

One of the common molds, called *Aspergillus fumigatus*, sometimes attacks the respiratory or digestive organs of fowls, producing either whitish or yellowish tubercle-like nodules in the tissues or large, flat elevations of a dirty yellow or greenish coloration on the surface of the mucous membranes. Each of the nodules contains a growth of the mold at its center, which is inclosed and imprisoned by a wall of animal cells. The flat elevations, however, represent the free growth of the mold on the surface of the mucous membrane, having very much the appearance which it presents when growing outside of the body on dead organic matter. The greenish color of the diseased area is due to the greenish filaments of the mold or fungus growing upon its surface. The filaments are not all on the surface, however, but they penetrate deeply into the tissues, causing inflammation and swelling, which obstructs the respiration, and at the same time they apparently produce a poison, which causes the general depression and fever. The changes caused by the development of this fungus are most frequently seen in the mouth, the trachea, the bronchial tubes, the lungs, and the air sacs, but they may also occur in the alimentary canal.

Causation.—The *Aspergillus fumigatus* is a very common fungus of great vegetative and resisting powers which is found everywhere growing upon dead organic matter of the most varied kinds. Its development is favored by warmth and moisture, and its spores are often found in enormous numbers in musty or moldy hay, straw, or grain. The mucus on the surface of the membranes, the serum beneath them, and the temperature of the bird's body are all favorable to its growth, while in addition it has the power to resist the efforts of the animal tissues to overcome and dislodge it. Having such characteristics, this fungus is one to be excluded so far as possible from the habitations of poultry, for otherwise it may cause severe and fatal disease.

The spores of aspergillus are most frequently introduced with moldy hay, straw or chaff that are given to the fowls to scratch in. Often the fungus grows on accumulations of manure, old leather, and similar substances when they are sufficiently moist, and produces spores in enormous numbers. Not all birds are susceptible to its attacks, and it seems to be the delicate breeds and the weak individuals which are most frequently its victims.

Symptoms.—This disease may be limited to a single bird or it may affect a large number. When the air tubes or lungs are attacked the first symptoms are a slight catarrh with accelerated breathing. Soon the swellings obstruct the passage of air and there is a rattling or croupy sound, heard chiefly during expiration. The affected birds mope, separate themselves from the remainder of the flock, remain in a sitting posture; if made to move, it is seen that they are weak and scarcely able to walk, and if they try to run, they soon fall from exhaustion. The difficulty of breathing increases rapidly; they gasp for breath and make movements of the head and neck as if choking; there is a fever, diarrhea, drooping wings, great depression, a tendency to sleep and finally suffocation and death.

When the disease is limited to the large air sacs the only symptoms are progressive loss of flesh and weakness. If the small air sacs of the bones are involved, which rarely occurs, there may be lameness, with swollen and inflamed joints. After death the yellowish nodules are sometimes found in the liver and kidneys as well as in the other organs which have been mentioned.

Treatment.—This disease is a most difficult one to cure, but sometimes affected birds may be saved by applying flowers of sulphur or tincture of iodine to the diseased patches seen in the mouth and throat, and causing the birds to inhale the vapor of tar water or turpentine. Tar water is obtained by stirring 2 tablespoonfuls of wood tar in a quart of warm water and letting the mixture stand for a few hours. Then the birds are taken into a closed room, where the tar water is poured, a small quantity at a time, on a hot brick or stone until the atmosphere of the room is well charged with the vapor.

The disease is prevented by giving only clean and bright straw or chaff for the fowls to scratch in, by keeping the houses and yards clean, and using grain and meal for feed which are sound and entirely free from mold. The birds which are sick should be removed from the flock and the bodies of those which die should be burned or buried. The fungus sometimes spreads from bird to bird; consequently the isolation of the sick and the disinfection of the houses should not be neglected.

COCCIDIOSIS.

Coccidiosis is a disease produced by the small forms of animal life called "coccidia." These germs are widely distributed in nature and frequently attack birds and the smaller mammals, such as rabbits, rats and mice. They are very destructive to young birds, as will be explained in describing the infectious diseases of young chicks, but in this place the description will be limited to the effects of this parasite on adult fowls.

Causation.—Many different species of birds are attacked by coccidiosis, and it is probable that the disease in fowls is always the result of contagion. Pigeons are particularly liable to the disease, and are frequently responsible for the outbreaks in the poultry yards. The transmission of the contagion from diseased to healthy birds occurs by contamination of the food, water, gravel, and other substances taken into the digestive organs. The coccidia multiply with great rapidity in the intestines of diseased birds, and enormous numbers are discharged with the droppings and are carried on the birds' feet to the feed troughs and drinking fountains unless these are well protected and of such form that they cannot be reached by the feet. Under any circumstances they are spread over the floor of the houses and the surface of the runs, and many will be picked up with gravel, grain and other substances. The germs are found in the part of the small intestines nearest to the gizzard, where they cause inflammation, with redness and thickening of the intestinal wall. They are also found in the ceca, which are frequently thickened and distended with a whitish, yellowish, or greenish yellow, pasty mass. After two or three weeks the disease may extend to the liver and lungs, where it is recognized by whitish or yellowish spots or by large cheesy nodules. Geese are attacked by another species, which cause nodules in the kidneys.

Symptoms.—Adult fowls have considerable powers of resistance to this parasite, and the disease with them is more frequently seen in a chronic form. The symptoms are dullness, weakness, sleepiness, diarrhea, and loss of weight, although the birds retain their appetites for a considerable time. In many cases the only symptoms are diarrhea, with loss of weight, and after a time apparent recovery though the germs continue to multiply in the intestine and to be spread with the droppings for several months afterwards. Fowls affected in this manner may die suddenly without previously showing any serious symptoms.

Pigeons are affected with a more acute type of this disease in which the symptoms appear only a short time before death. Generally however, they are dull and sleepy for a day or two, and sometimes they have a chronic form, characterized by diarrhea and loss of weight.

Geese with coccidiosis of the kidneys lose flesh rapidly, without apparent cause, and become very weak and almost unable to walk. They remain quiet most of the time, with belly resting upon the ground. Some of them are conspicuous by lying on their backs with their feet widely separated, and if placed upon their feet they take a few steps, fall, and resume the former position. In all such cases the birds lost their appetites and continue to get weaker until they die.

Treatment.—The most successful treatment has been to put 3 grains of copperas (sulphate of iron) to a quart or 15 grains of catechu to a gallon of the water given the birds to drink. They should also be given an occasional dose of calomel (¾ to 1 grain) or of castor oil (2 to 3 teaspoonfuls). They may also be given castor oil containing 5 to 10 drops of oil of turpentine with each dose.

As the coccidia are brought on the premises with birds or eggs for hatching obtained from infected flocks or by pigeons flying from place to place, the necessary precautions should be observed to guard against such channels of infection. Fowls and eggs should be obtained only from flocks known to be healthy, and pigeons should be excluded from the poultry yard.

This form of contagion is very difficult to destroy, and the most active disinfectants should be used. A mixture containing 10 per cent of the compound solution of cresol is none too strong.

The bodies of the birds which die should be burned.

WHITE COMB (FAVUS).

White comb, baldness, or favus of fowls is a contagious disease that begins by the formation of white or grayish spots on the comb, ear lobes or wattles. These spots are caused by the growth of a fungus called *Lophophyton gallinae*, and they continue to enlarge, run together, and become more inflamed until all the skin of the head and neck is much thickened, roughened, covered with crusts, and more or less bare of feathers. In extreme cases this inflammation may extend over the skin of other parts of the body, affecting the general health and causing weakness, with, finally, exhaustion and death.

Causation.—This disease is transmitted from fowl to fowl by simple contact and is easily transmitted by inoculation from fowl to fowl. It is most frequently seen affecting common fowls and turkeys, and may be communicated by inoculation to mice and rabbits, but attempts to infect lambs, dogs, rats, guinea pigs, and pigeons have failed. It is also easily inoculated on man, producing large red, scaly patches on the skin, and such patches sometimes develop spontaneously, being no doubt due to contagion from affected fowls.

The filaments of this fungus do not penetrate deeply into the skin, but remain very near to the surface, and consequently the general health does not suffer in the early stages of the disease. It is only when a large area of skin is affected that there are symptoms, such as diminution of appetite, loss of weight, and great weakness, which indicate the absorption of poisonous products. Young birds are believed to be more susceptible than older ones, and some breeds appear to inherit a predisposition to the disease, but no age or breed is entirely exempt from it.

Symptoms.—Favus generally begins on the bare parts of the head as small white or grayish spots, round or irregular in form, which increase in number and size and join together until the whole surface is covered. The affected spots are covered with dry, scaly, dirty-white crusts with an irregular surface, and have an appearance of being formed of concentric deposits. Removing the deposit the skin beneath is seen to be slightly inflamed and abraded. Often the circular spots enlarge regularly and are covered by layers of scales thicker at the periphery than at the center, which gives them a peculiar cup-shaped appearance. As the disease advances the skin becomes thicker, until in the course of a month it may reach one-third of an inch and considerably change the appearance of the head. The neck and body are gradually invaded, the feathers become brittle and break off, leaving a deep depression in the center of a cup-shaped disk. Occasionally the disease is inoculated into the feathered parts of the skin and begins there instead of on the bare parts of the head, but this is exceptional.

The disease when limited to the comb and wattles may disappear without treatment, but after it has invaded the feathered parts it almost invariably continue to advance, and the birds grow weaker until they die from this or some other disease to which their debilitated condition has made them abnormally susceptible.

Treatment.—When only the bare parts of the head are affected the disease may be cured by applying tincture of iodine to the diseased spots. Some recommend an ointment of calomel 1 part, vaseline 8 parts; others prefer a mixture of soft soap 20 parts, carbolic acid 1 part, to be well mixed and applied daily. An ointment of red oxide of mercury 1 part, vaseline 8 parts, is also used, as well as olive oil containing 1 per cent of carbolic or cresylic acid.

It is essential that the affected bird should be separated from the flock, put in a dry, clean place, and given good nourishing food. If the feathered parts of the body are affected, it is better to kill the bird, as the treatment would be long and expensive and there would be danger of the disease spreading.

The disease should be prevented by excluding all affected birds, by burning the bodies of those which die or are killed, and by disinfecting the houses where diseased birds have been.

"GOING LIGHT" (LOSS OF WEIGHT).

"Going light" is a term applied to fowls which persistently lose weight, become emaciated, anemic, weak, and unproductive. Sometimes it is only one or two birds that are so affected, but frequently it is a large part of the flock. Fowls "go light" from different causes; sometimes it is the result of being severely infested with lice and mites; at other times it is due to intestinal worms; and at still other times to chronic forms of infection with aspergillosis, coccidiosis, tuberculosis, or cholera. When, therefore, the fowls are not thriving, and when lifted appear to weigh little more than should the feathers with which they are covered, an investigation should be made to determine the cause. This should begin with the food supply and it should be ascertained whether the birds have been receiving a sufficient quantity of sound and nutritious food. Then the birds and the houses should be carefully examined for lice and mites. Separate the feathers under the wings, about the vent, and over the rump, and look carefully for these parasites. Then examine the houses, take out the roosts and examine them carefully, especially on the under sides and at the ends; also the woodwork on which the roosts are supported. If no defect is found in the rations, and the birds and houses are free from lice and mites, kill one of the lightest birds and carefully open the intestines for their entire length to learn if the birds are harboring a sufficient number of intestinal worms to account for their condition. A few worms would not have such a pernicious effect; but if there are many they would certainly be partly, and probably would be entirely, responsible for the emaciation. If the fowl is found to have few, if any, parasitic worms, the cause of the trouble is probably a chronic infection with one of the microbes mentioned above.

The treatment of this condition will obviously depend upon its cause. If it is found to be due to insufficient food or food of bad quality, a proper ration must be provided. If it is due to lice and mites or to intestinal worms, these parasites must be combated by the measures elsewhere enumerated. If it results from chronic microbian infection, an effort should be made to overcome this by thorough cleaning and disinfection of the houses, by feeding sour milk or buttermilk with the ration, and by giving an occasional purgative, such as Epsom salts or castor oil. In any event the food must be abundant, the fowls must have plenty of exercise, and the houses must be kept in a dry and sanitary condition.

INFECTIOUS DISEASES OF YOUNG CHICKS.

Young chicks are particularly susceptible to the attacks of the various microbes which cause disease in adult fowls, and the conditions of infection, the symptoms, and the preventive measures to be adopted vary to such an extent that they must be given special consideration.

White Diarrhea.—This is a condition which has as its most prominent symptom more or less profuse diarrhea, the droppings consisting almost entirely of mucus from the intestinal tube and the white secretion of the kidneys. The diarrhea results from irritation of the intestines and of the increased secretion of mucus, while the large quantity of white mate- the increased secretion of mucus, while the large quantity of white material secreted by the kidneys is due to fever and rapid breaking down of the elements of the tissues. This condition is most frequently seen with incubator chicks, but is also common with those which are hatched under hens.

Causation.—It has been found by investigation that the white diarrhea of young chicks is caused by at least four different kinds of infection, and each of these needs to be studied separately. All of these microbes also infect adult fowls and are generally communicated directly or indirectly from these to the chicks.

The most common cause of the disease is a bacillus called *Bacterium pullorum*. This often infects hens and also the eggs which they lay. Such eggs produce chicks which have the germs of the disease within them when they are hatched, and these chicks show symptoms within the first few days of their lives. The contagion may also be communicated from chick to chick by means of the microbes scattered with the droppings, which contaminate the food and drink, and cause the appearance of the symptoms when the birds are from 1 to 2 weeks old. The chicks are most susceptible to infection during the first 24 hours of their lives, are more resistant during the second and third days, and are practically insusceptible after the fourth day. Those that sicken later must have taken the microbes into their bodies before they reached that age. Incubators and brooders, as well as coops, become infected and preserve the contagion indefinitely. Adult fowls are resistant to the microbe and do not show any symptoms even when they are laying infected eggs.

The cholera bacillus may also be carried by laying hens and infect the egg before it is laid. The young chicks hatched from such eggs soon show symptoms of disease and communicate the contagion to others at all ages.

The coccidia which causes a chronic disease in adult fowls may also infect the eggs and cause disease with similar symptoms in the chicks.

The aspergillus fungus is the fourth cause of white diarrhea. It occasionally is included in the egg when it is laid, but it may also penetrate the shell when eggs are packed in moldy chaff, straw, or grain, or allowed to get damp.

All of these microbes may also be carried on the outside of the shell, and may infest nest boxes, incubators, brooders, and yards where diseased chickens have been.

Symptoms.—The symptoms of white diarrhea are seen in young chicks which are from a day or two to 3 or 4 weeks old. In the most acute form they may die suddenly after having shown but slight symptoms for a short time. Generally, however, there is first observed a disposition to huddle together and to remain under the hover or under the hen more than young chicks should. Very soon they appear listless, indifferent to what is going on about them, stupid, and sleepy. They stand in one position or sit still with the eyes closed, and the few efforts which they make to pick up food appear mechanical and unsuccessful. Their plumage loses its luster, the wings droop or project slightly from the body, and the characteristic diarrhea soon appears. The droppings which are voided may be white and creamy, mucilaginous and glairy, or they may be mixed with a brownish material. Often the sticky excrement adheres to the downy feathers about the vent, dries and continues to accumulate until it completely covers and plugs this opening. This condition, known as "pasting up behind," will, unless soon relieved, bring about the early death of the chick.

Many of the diseased chicks chirp or peep almost constantly, and when attempting to void the excrement they may give utterance to a shrill cry, as if the effort brought on paroxysms of pain. As death approaches the breathing becomes labored, and the abdomen heaves with each breath. Often the disease is of a more chronic type and has a longer course. The young birds with diarrhea gradually waste away, become weaker and more emaciated until their legs are scarcely able to support their bodies. They try to brace themselves by standing with the legs apart or they rest against a wall or other object for support. Many of them have the peculiar form of body called "short backed," which results from the distention of the abdomen and its projection backward, which makes the back appear too short for the body. Toward the last the strength is completely exhausted, and the chick sits constantly or lies on the side with outstretched wings until it dies.

The most prominent and characteristic symptoms in nearly all cases are the white diarrheal discharges and the rapid wasting away of the affected birds. The losses vary from 50 to 80 per cent of the chicks hatched. Sometimes it is impossible to raise any of them.

Treatment.—The medical treatment of affected chicks is impracticable, as it is too expensive and has very little effect on the course of the disease. The birds may be given sour milk or buttermilk to drink, or, lacking this, 15 grains of powdered catechu may be added to the gallon of drinking water.

The preventive measures should begin with the eggs used for hatching. If these are purchased they should only be accepted from flocks known to be healthy, and the eggs of which give rise to healthy chicks. If this assurance cannot be obtained, it is better to produce the eggs needed for hatching on the home farm and from hens that are known to be free from infection.

Having obtained the eggs, they should be kept until ready for incubation in a dry, moderately cool place, so spread out that the air can circulate over them and carry away the moisture which they exhale. They should not be placed in hay, straw, chaff or other substance liable to become musty or moldy. Before putting them into the incubator or under the hen they should be wiped with a cloth wet in grain alcohol of 70 to 80 per cent strength to remove any germs that might be on the surface of the shell. The hens used for hatching should be free from all infection and the incubator should be thoroughly cleaned. If there have been any sick chicks in it, it should be disinfected by washing with compound solution of cresol (5 per cent solution). The same precautions should be adopted in regard to the brooder.

If the hatching is done by a hen the brood should be put upon fresh ground, and any chicks which sicken should be immediately removed and isolated or killed. By removing frequently to fresh ground or by frequent disinfection the disease may sometimes be limited to a few individuals.

If the hatching is done in an incubator and there is reason to suspect that the disease may develop, it is well to divide the trays and the brooder by light partitions so that not more than 4 or 6 chicks will be in one lot and exposed to each other. If white diarrhea appears in any of these lots, such lots may be removed and the places which they have occupied may be disinfected. After four or five days the partitions may be removed and the healthy lots of chicks put together. In this way the greater part of the chicks are protected against the most common form of the disease.

Brooder Pneumonia.—This is an inflammation of the lungs caused by the growth of the aspergillus fungus in the smaller air tubes and in the lung tissue. It is believed that it may occur from infection carried within the egg. Whether this infection is derived from the hen or from the material in which the eggs have been packed is not definitely known, but the latter method of infection is the more probable. The fact of the lungs being the principal seat of the infection indicates that the spores in most cases are inhaled with the breath and germinate at or near the points where they are deposited. The inference from this method of infection would be that the incubators or brooders, or both, had been allowed to get filthy and moldy, and that the atmosphere in these was filled with aspergillus spores.

The symptoms are very similar to those described as present in white diarrhea, but the breathing is more rapid and difficult and is sometimes accompanied by sounds due to obstruction of the air tubes. The disease is not generally distinguished from white diarrhea, as this symptom (white diarrheal discharges) is usually present in the lung disease as well as in the intestinal infection.

The sick chickens cannot be cured, and therefore all the efforts must be directed toward prevention. The measures mentioned for the prevention of white diarrhea are applicable to brooder pneumonia, but if the disease has once occurred among the chicks especial care must be given to the cleaning, disinfection, and drying of the incubators and brooders before they are again used. It is probable that this disease is generally due to failure to maintain a proper degree of cleanliness.

Gapes.—Gapes is a disease of chickens which develops during the first few weeks of their lives and is made evident by frequent gaping. It is caused by a parasitic worm (*Syngamus trachealis*) which attaches itself to the internal surface of the windpipe, sucks blood from the mucous membrane, and obstructs the passage to such an extent as to interfere seriously with the breathing. The insufficient supply of air, the loss of blood, and the diminishing activity in looking for food lead to a weak and bloodless condition and often to death from overcrowding or exposure that a well chick would be able to resist without injury. Sometimes so many worms accumulate in the windpipe that breathing becomes impossible and the chick dies from suffocation.

Causation.—The worm which causes this disease is sometimes called the red worm or the forked worm because of its color and of the fact that the male and female are so firmly grown together that they cannot be separated without tearing the tissues. The two worms united in this manner appear at first sight like a single worm with two necks and two heads. The female is a little more than one-half inch in length and the male one-fifth inch. The heads of both are attached to the mucous membrane, irritating it to such a degree that there is an increased secretion of mucus, which collects and increases the difficulty of breathing.

A large number of eggs develop in the female worm while in the windpipe, and these are either thrown out by the chick while sneezing or they are swallowed, pass through the stomach and intestines unharmed, and are scattered with the droppings. These eggs adhere to the food or get into the drinking water and thus infect other chicks and keep up the disease indefinitely. Often the red worms are coughed up, but they are immediately seized and swallowed by some of the chicks, and in this manner also the disease is spread.

The eggs of this worm live a long time in the soil and are sometimes taken into the digestive tube of earth worms. In badly infested ground a considerable proportion of earthworms may, if eaten, be capable of causing the disease in chicks.

These facts explain why ground upon which chickens are raised year after year becomes so badly infested, and how the infection is carried over from one year to the next. It seems that the worms may also be carried by grown fowls and by some wild birds and that this is another means for their preservation.

When the eggs of this worm are taken into the stomach of the chicks the young worms are soon liberated and find their way in a few days to to the windpipe, where they may be seen already attached within a week.

Symptoms.—The symptoms of gapes are most frequently observed in chicks from 10 days to 4 weeks old. The affected birds cough or sneeze with an abrupt, whistling sound and a more or less labored effort. Very soon they begin to gape, extending the neck and opening the beak, thus indicating that they are not getting a sufficient supply of air. During the first few days the appetite is ravenous, but in spite of the quantity of food eaten the birds become weak, anemic, and emaciated. Later there is little appetite, the affected birds are dull, have difficulty in keeping with their companions, and as the disease advances their wings droop and they stand with closed eyes and head drawn back into the body. Frequently the head is thrown forward and they gape or give a convulsive shake in order to loosen the obstruction in the windpipe and permit the entrance of air. In this condition they are liable to die suddenly from suffocation, from exhaustion, or from being trampled by their fellows at night.

The most vigorous and the older birds show only mild symptoms or none at all. They may gape occasionally, but their appetites remain good and they continue to grow. However, as the soil becomes more and more intensely infested the proportion of the chickens which are able to resist the attacks of these parasites become less, until finally it may be almost impossible to raise either chickens or turkeys.

Treatment.—Reliance must be placed upon prevention rather than cure, because a chicken 2 to 3 weeks old has not sufficient value to warrant the expenditure of much time or medicine in its treatment.

Sometimes it is found advisable to extract the worms or to inject some liquid into the windpipe which will kill them. Extractors are made in various ways. Generally a small quill feather is stripped of all of its web except a small tuft at the end, and this is used either dry or moistened with kerosene or oil of turpentine. A fairly good extractor may be made by taking a hair from a horse's tail, bending it in the middle, and twisting the two ends together so as to form a loop; or a similar loop may be made by cutting the hair, laying the two pieces side by side, tying a knot near the end, trimming the short ends close to the knot, and twisting the long ends together. These homemade extractors have been imitated in the poultry supply trade by doubling and twisting a small flexible wire which carries a few moderately stiff hairs to scrape off the worms.

These extractors are all used in the same manner. The chicken's beak is forced open with the thumb and fingers of the left hand, while the extractor is held in the right hand. When the glottis, which is a small aperture at the root of the tongue, is opened for breathing, the extractor is carefully inserted and pressed downward into the windpipe. The neck should be kept extended in a straight line, so that the extractor will enter freely and not injure the delicate walls of the windpipe. At the first insertion the loop or brush should not pass more than an inch below the glottis; then it should be given two or three turns between the thumb and finger and withdrawn. If any worms adhere to it, these should be dropped into a basin of hot water or kept and burned. The extractor may now be inserted a little deeper, and so until it reaches nearly the full length of the neck. If the slightest resistance is felt to the entrance of the extractor, it should not be pressed upon or inserted any farther. In all cases the extractor must be quickly withdrawn to avoid suffocating or otherwise injuring the chicken. Often 8 or 10 worms may be removed in this manner, and if the treatment has not been so rough as to cause injury, the symptoms will be very much improved.

Recently good results have been reported from medicating drinking water with 15 grains of salicylic acid or 3 drams of salicylate of soda to the quart of water, and in Germany the disease is said to be successfully treated by introducing a small soft-rubber tube into the windpipe, in the same manner as described for an extractor, and injecting 3 to 10 drops of a 5 per cent solution of salicylate of soda.

The best method of prevention is to put the chicks, when hatched, on fresh ground; to remove, place in a separate coop, and treat any that show symptoms, and to plow and seed down the old, infected runs, not permitting chickens to go upon them for two or three years.

WORMS.

Sometimes the fowls of a flock become badly infested with worms, which live in the crop, stomach and intestines, and either cause serious disease or affect the nutrition so that the birds become weak, bloodless and unproductive. The nature of the condition is determined by examining the birds that die, or by killing one that is very thin and weak. The intestines, the stomach and the crop should be opened and their contents carefully examined. If a considerable number of roundworms or tapeworms are found, the remainder of the flock should receive appropriate treatment.

Treatment.—The remedies which are used to dislodge these parasites should be given when the birds are fasting. They should have a light feed at night and should be given the medicine the following morning. Two or three hours after giving the medicine they should have a purgative, which may be Epsom salts, 40 grains for each adult bird thoroughly mixed with a small quantity of moist mash and so distributed that each bird will get its share, or they may be given 2 or 3 teaspoonfuls of castor oil. An hour later a light ration may be given.

One of the best remedies is oil of turpentine, which may be mixed with an equal quantity of olive oil and 20 or 30 drops of the mixture given at a dose. This is followed in two hours with 2 to 3 teaspoonfuls of caster oil.

Thymol is especially active in the case of roundworms, and 1 grain of it may be made into a pill with a little bread and butter and given to each fowl. It should be followed by a purge, as in the case of other remedies. Santonica or worm seed in doses of 7 or 8 grains is also successfully used to combat this class of worms.

The remedies which are particularly efficacious for tapeworms are powdered areca nut, 30 to 45 grains; powdered male fern, 30 to 60 grains; kemala, 30 to 40 grains for each fowl. These are followed by Epsom salts, castor oil, or calomel (one-third grain). Areca nut, male fern, and kamala may produce bad effects in turkeys and geese, and must be given to these birds in comparatively small doses.

Preventive treatment must be carried out at the same time as the medical treatment or the birds will be immediately reinfested by eggs or embryos of worms taken with the food or drink. Ponds or puddles of stagnant water should be drained or filled with earth; houses and runs (if small) should be cleaned and disinfected with 5 per cent cresol solution; feeding troughs and drinking vessels should be cleaned daily and disinfected with the same cresol solution or with boiling water; the manure should be collected daily, mixed with an equal quantity of freshly slaked lime, and put where the fowls will not have access to it.

It is considered preferable by some poultrymen, in the case of a badly infested flock, to kill off all the birds and begin a new flock on fresh ground with chickens hatched in incubators or with fowls from a flock known to be healthy.

MANGE (SCABIES).

Fowls and pigeons are affected by scabies, but the disease is not communicated from pigeons to fowls, nor vice versa, as the parasitic mites are not identical.

Causation.—The mites which cause the disease are introduced into the poultry yard by affected fowls, and they spread rapidly from fowl to fowl until nearly or quite all of the birds are affected. The mite lives at the base of the feathers, where it bites the skin and causes intense itching.

Symptoms.—This form of mange is often called depluming scabies on account of the rapid destruction of the feathers. It generally begins in the spring, is most active during the warm weather, and disappears in winter. The most prominent symptom is a loss of feathers from spots of various sizes on different parts of the body. It usually begins on the rump and spreads rapidly to the back, thighs, breast, neck, and head. As the mites progress from the starting point over the surface of the body their advance is indicated by the falling of the feathers, until finally the fowl becomes nearly naked, the large feathers of the tail and wings being all that remain.

The skin which is bared in this manner is smooth, soft, and little if any changed by the disease. However, if the stumps of the feathers are examined soon after the breaking of the quill they are found surrounded by scales and crusts, and by pulling out the adjoining feathers they are seen to be similarly affected.

The irritation produced by the mite leads the fowls to pull out their feathers, and they often acquire the habit of feather pulling, attacking the plumage of other birds as well as their own. Depluming scabies is often mistaken for the vice of feather pulling or for irregular molting. Usually the general health of the affected birds does not suffer greatly, but if the disease is allowed to continue untreated some of the hens lose flesh and become unproductive, while the males may show great weakness and anemia.

Treatment.—Apply to the affected spots of the skin and for some distance around them an ointment made by thoroughly mixing 1 part of flowers of sulphur with 4 parts of vaseline or lard, or 1 part of carbolic acid with 50 parts of vaseline. A convenient liquid preparation is made by mixing Peruvian balsam 1 ounce, alcohol 3 ounces. One of these preparations should be selected and applied at least twice with an interval of about a week. A good lice powder should be applied to all of the fowls a day or two before beginning the other treatment, and at the same time that the latter is applied the houses should be thoroughly cleaned and disinfected.

SCALY LEG, MANGE OF THE LEG.

This condition is caused by a mite of another species from that which causes mange of the body. It affects fowls, turkeys, pheasants, and cage birds. While usually it does not affect the general health of the birds, it gives them a very unsightly appearance and is an indication of neglect and bad management on the part of the owner. The disease occurs only by contagion from other birds; it spreads very slowly, and many individuas escape it entirely, although constantly exposed to it.

Symptoms.—The disease is easily recognized by the enlargement of the feet and legs and the rough appearance of the surface caused by the loosening and raising of the scales on the legs and the upper surface of the feet. This parasite begins its attack in the clefts between the toes and gradually spreads forward and upward until the whole of the foot and shank becomes affected. The two legs are usually attacked at the same time and about to the same degree. At first there is seen only a slight roughening of the surface, but the continued irritation by the mite causes the formation of a spongy or powdery substance beneath the scales which raises them more and more, until they are nearly perpendicular with the surface and are easily detached. In the most severe cases the joints become inflamed, the birds are lame and scarcely able to walk, a joint or an entire toe may be lost, and the birds, unable to search for food, lose flesh and die from hunger and exhaustion.

Treatment.—Wash and brush the legs with soap and warm water, removing the loose scales that come off without causing bleeding. Dry the legs and apply a coating of balsam of Peru or an ointment containing 2 per cent of carbolic acid. A remedy highly recommended is made by mixing 1 part of oil of caraway with 5 parts of vaseline. When large numbers of fowls are to be treated, some poultrymen make a mixture of one-half pint kerosene and 1 pint raw linseed oil in a quart can, take this to the poultry house at night, and dip both legs of each affected bird into the mixture, allowing them to drip into the can for a minute after removal, and then replacing on the roost. The feathers of the leg must not be wet, as this causes irritation and sometimes burns the skin. The treatment should be repeated in three or four days.

CROP BOUND, IMPACTED CROP.

This is an overdistended and paralyzed condition of the crop, generally caused by overeating or by swallowing coarse and indigestible substances, such as feathers. In cholera the crop is paralyzed as a result of the disease.

Symptoms.—The first symptom is a loss of appetite or an effort of the bird to swallow without being able to do so. The crop is seen to be very large and much distended with contents which are more or less firmly packed together. If permitted to continue, the condition becomes aggravated, the breathing difficult, and death may result.

Treatment.—The contents of the crop may sometimes be removed by forcing the bird to swallow a teaspoonful or more of sweet oil, then massaging the lower part of the gullet, if it contains food, or, if not, the part of the crop nearest to the gullet, until a part of the contents are softened and may be pressed toward the head. This is made easier by holding the bird head downward. By continued manipulation the greater part of the material may be removed. The bird should not be permitted to eat for several hours after it is relieved.

If this plan of treatment is not successful, the crop must be opened with a sharp knife and the contents removed through the opening, using for this purpose a coffee spoon, a button hook, small forceps, a bent wire, or other suitable instrument. After this is done, wash out the crop with clean, warm water. The opening should not be over an inch in length and should be closed with 3 or 4 stitches first in the wall of the crop and when this is finished an equal number in the skin. Each stitch should be made and tied separately. Coarse white silk is the best material, but if it is not at hand ordinary cotton thread may be used.

Feed on milk and raw egg beaten together for a day or two, and gradually change to soft mash.

INFLAMMATION OF THE STOMACH OR INTESTINES.

This trouble, when not the result of one of the contagious diseases to which reference has been made, is generally due to eating moldy or putrid food or irritating mineral poisons. It is indicated by loss of appetite, dullness, and constipation or diarrhea. It may be treated by giving 30 or 40 grains of Epsom salts or 2 teaspoonfuls of castor oil, and feeding a soft mash for a day or two.

LIMBERNECK.

The condition known as "limberneck" is in reality not a disease but is a symptom of several diseases which are characterized by a paralysis of the muscles of the neck, which makes it impossible for the bird to raise its head from the ground. This condition is due to the absorption of poisons from the intestines, which act upon the nervous system and cause paralysis. It is generally associated with indigestion, or the eating of moldy grain or putrid meat or with intestinal worms. The best treatment is to give a full dose of purgative medicine; that is, 50 or 60 grains of Epsom salts or 3 or 4 teaspoonfuls of castor oil for a grown fowl. Often the birds will be cured within 24 hours, and in case they are not better within 3 or 4 days it is not advisable to keep them.

LIVER DISEASE.

When not produced as the result of one of the contagious diseases described elsewhere, liver disease is generally caused by errors of feeding and lack of excercise. It can not certainly be distinguished from other forms of disease during the life of the bird. When examined after death the liver is found enlarged and so tender that it is easily torn. If it is suspected that other birds in the flock are similarly affected, correct the ration, give plenty of green feed, and encourage exercise in the open air.

CARE, FEED AND MANAGEMENT OF THE DAIRY HERD.

Circular No. 16, Agricultural Experiment Station, Iowa State College of Agriculture and Mechanic's Arts.

BY H. H. KILDEE.

Dairy farming is rapidly increasing in popularity in almost every section of Iowa because the dairy cow has characteristics which not only give her present popularity but insure it for all time to come.

One of the chief advantages of dairy farming is that the dairy cow fits admirably in diversified and intensive farming where the farmer strives to produce the greatest possible income from a small acreage and yet retain the fertility of his farm. In Europe, the dairy cow is the foundation of agriculture in the most prosperous countries, such as Denmark and Holland. Proof that she is adapted to high priced land may be found on the Jersey Isle, where ground rentals run from $50 to $60 per acre annually, and in Holland, where farms sell up to $1000 per acre. In both places land is used largely for dairy farming. In Iowa, land is constantly getting dearer, yet by using silos and soiling crops, tilling the farm intensively and purchasing some concentrated nitrogenous foods, it is not out of the question to keep one cow to each acre of ground, and even more under certain conditions. Poultry and swine raising may be carried on most successfully on the dairy farm because of the feeding value of the skim milk, a valuable by-product.

DAIRY FARMING INCREASES SOIL FERTILITY.

Dairy farms increase rather than decrease in soil fertility. A ton of corn worth from $10 to $14 removes $8.60 worth of plant food. A ton of butter worth over $600 removes only 64 cents' worth of plant food. A dairy cow weighing 1,000 pounds voids 11 to 13 tons of solid and liquid manure each year, which is worth about $25 for increasing crop yields. Many farms which were formerly very poor from the fertility standpoint have been built up in a few years through feeding the crops and purchased supplementary feeds to dairy cows.

Economy of production is another factor in favor of the dairy cow. Quoting Professor W. A. Henry, "Not only is dairying the leading animal industry of our country at this time, but so it must continue indefinitely, for the reason that the cow is a more economical producer of food for human beings than is the ox or pig." And again, "for each 100 pounds of digestible nutrients consumed, the dairy cow yields about six times as much edible solids in her milk as the beef steer or mutton sheep in its carcass."

In addition to being an economical producer, the dairy cow is a more dependable source of profit than the beef steer, because her products are but slightly affected by market fluctuations and because she is a continuous source of revenue, for the cream or milk checks come in at frequent and regular intervals. Then, too, there is a greatly increased demand for dairy products and for grade and pure bred dairy cattle, not only in the United States, but also China, Japan, New Zealand, South America and elsewhere.

One of the strongest arguments brought against dairy farming is that it is often rather difficult to secure competent help. It will be noticed, however, that the man who makes the milking a part of the day's work instead of attaching it as something in addition to a normal day's work, has little or no difficulty on this score. It is not the milking itself that many hired men and boys object to, but that on many farms they are compelled to do this work early in the morning and late at night in addition to a full day's work in the field.

IOWA'S AVERAGE PRODUCTION LOW.

In spite of the fact that dairy cows as a class are very economical producers, many cows milked in Iowa at the present time do not pay for their feed, in milk and butter fat. It is safe to say that the average amount of butter fat produced by the cows in Iowa does not exceed 140 pounds per cow per year. At the same time there are many animals in the state that have produced over 500 pounds, several have exceeded 700 pounds, a few 800 pounds and the Guernsey cow, Dairy Maid of Pinehurst, produced 910.67 pounds of butter fat in one year. The world's record for all breeds is 1058.34 pounds of butter fat, produced by the Holstein cow, Banostine Belle DeKol. Another cow of the same breed, Creamelle Vale, holds the world's milk record for one year, with 29,591 pounds of milk. Considering the fact that the cost of keeping a cow is not in proportion to her production, for poor, unprofitable cows in many cases are fed the same rations as large and profitable producers in the same herd, it can readily be appreciated that the present low average production is unsound and unbusinesslike.

This condition is due both to inferior cows and to improper care, feed and management of the cows. Either one or both factors may

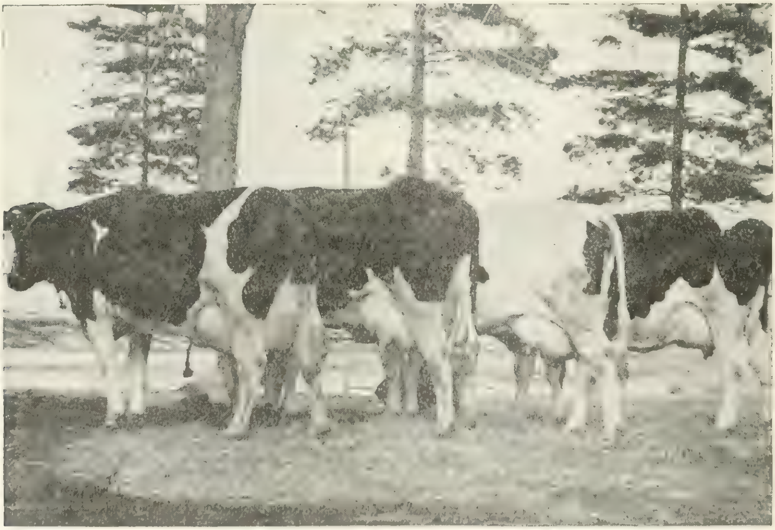


Fig. 1. Four pure bred Holstein cows owned by Iowa State College. Average record for one year 16660.3 pounds milk, 557.57 pounds butter fat, average test 3.34%, average net income for butter fat after deducting cost of feed, $110.21 per cow.

play an important part in cutting down profits. Thousands of cows kept on Iowa farms are not returning a profit simply because they are improperly fed and managed, and still larger numbers of so-called dairy cows are not paying for their feed and could not, even though given the very best of care and feed. The term dairy cow, as used in this state at the present time, is a misnomer, as about one-third of these so-called dairy cows have practically nothing in common with the typical dairy cow, either in conformation or productive ability. Nearly one-half of the remaining cows are so fed and managed that they produce about one-half of what they are capable of producing if properly cared for.

An experiment which is being carried on at the Iowa State college dairy farm to determine the effect of feed and environment upon amount of milk and butter fat produced by scrub cows brought from an isolated region in Arkansas is demonstrating that the amount produced, and consequently the profit returned, is materially influenced by the feed and management. Heifers out of these scrub cows and by pure bred dairy bulls are in many cases producing much more milk and butter fat, as two year olds, than their dams have produced as mature animals.

HOW ONE IOWA HERD IMPROVED.

The following records made by the herd of Peder Pedersen & Son in the Benson Cow Testing association in three consecutive years is especially interesting and valuable in this connection, as it shows what can be accomplished on the farm by keeping records, weeding out the poor cows and by proper feeding and management.

	Average Milk per Cow	Average Butter Fat per Cow	Net inc'me per cow over cost of feed
1911	5665 pounds	207.7	$ 22.12
	Largest net income cow in herd		54.22
1912	7060 pounds	251.9	53.96
	Largest net income cow in herd		106.30
1913	9697.47 pounds (for the year)	341.98	75.00
	Estimate for each of two largest net income cows		144.00

The increase in production and in the net returns for butter fat, after deducting the cost of feed, in this herd in the course of three years is remarkable and was brought about by use of a pure bred sire, weeding out the inferior cows and giving the remaining ones better care and feed. This herd was made up of grades and a few pure bred Holsteins and the number of cows remained about the same during the three years reported.

THE DAIRYMAN A BUSINESS MAN.

The successful dairyman is not only a farmer and breeder, but, in the true sense of the word, he is a business man from the commercial standpoint, and a producer from the manufacturer's standpoint. He breeds, feeds and selects his cows, each upon its individual merits, for the purpose of converting the raw materials grown on the farm, in the form of grains and grasses, into a finished commodity of commerce—milk and butter fat. The success of a manufacturer of shoes is determined by his ability to turn out a large number of shoes of good quality, such as will command a good price on the market, at a low cost of production. This is equally true of the producer of butter fat and milk. The price per pound of the commodity he produces is determined by its quality. Quality is determined by richness, color and cleanliness.

Not only is the quality and price per pound important, but also the quantity produced and the cost of production. Many cows yield milk extremely rich in quality or butter fat but give such a small amount that they do not pay for the food consumed. Others give a comparatively large amount of milk but so low in its butter fat content that they also do not pay for their feed and keep. The profitable butter fat machine then may readily be summed up as one that has the ability and capacity to produce from a minimum food supply a maximum amount of milk rich in butter fat content.

SELECTION OF COWS.

Extreme care is necessary in selecting cows, for no amount of skill in feeding and handling will stimulate a profit from a truly poor cow. A good dairy cow is one with a large capacity for using food above the maintenance requirement and one that uses this food for milk production. In determining the most desirable breed, one must consult his own likes and dislikes first. The man who likes a Holstein cow and dislikes a Jersey will be more successful with the former.

Conditions on the farm and the demands of its market need to be studied before selecting any breed. Jerseys and Guernseys are noted for their high per cent of butter fat, and their economy of butter fat production, especially under intensive farming conditions. The Guernseys in particular are known for the excellent color of their milk and butter fat. Holsteins and Ayrshires are noted for a larger flow of milk which is lower in per cent of fat. The Holsteins are very popular with Iowa farmers, because they are large, rugged and able to use large quantities of farm grown feeds in the manufacture of milk and butter fat, the milk being very valuable in raising calves, pigs and chickens. The Ayrshire breed is noted for its ruggedness and its rustling ability and yields a fair quantity of milk and butter fat.

As a matter of fact, however, the breed is of less importance in selecting the cow than is individuality, for in every breed there are good individuals and poor individuals. It is important, not only that the breed, but that the strain or family represented be noted for large and economical production of milk and butter fat. Experience has taught that form and function go hand in hand, so it is of utmost importance to demand dairy cows of proper form and type. There are, however, many exceptions to this rule, so that the performance of a cow through a period of lactation and the performance of her ancestors, especially her paternal grand dam, should have a great deal to do with her selection.

As a rule, sons of great producing cows are more likely to beget large producing daughters than are great producing cows them-

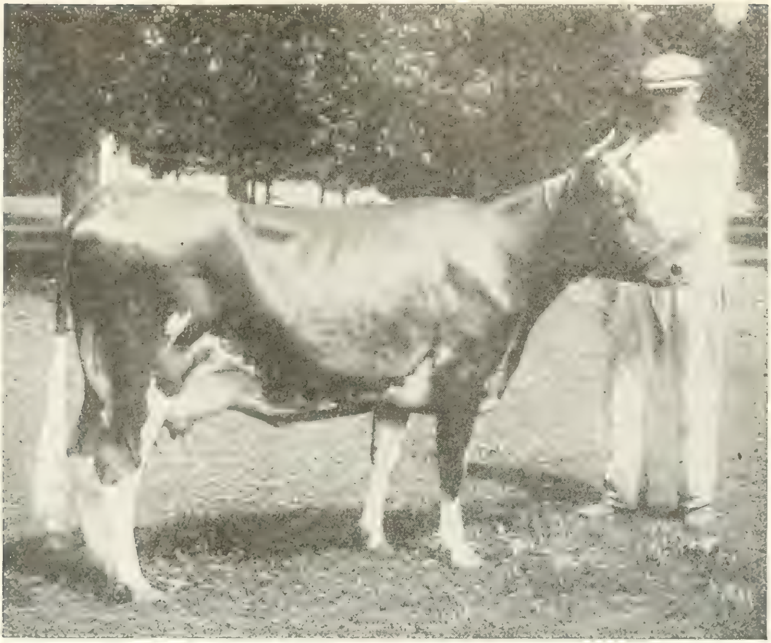


Fig. 2. Rouge II of the Brickfield, owned by Iowa State College. Has a year's record of 10,963 pounds of milk and 612.53 pounds of butter fat. World's record for a 2½ year old imported Guernsey.

selves. This illustrates the fact that cows need not necessarily be pure bred for a buyer or dairyman to take advantage of pedigree. Every cow has a pedigree, but not all pedigrees are on paper. In view of this fact, in selecting grade cows look up and consider the performance of dams as far back as they can be found.

Many buyers wisely use the Babcock test and scales in making their selections. By their use it is possible to determine the exact number of pounds of milk and butter fat produced by an animal. By noting whether she is advanced in her period of lactation and what her care and feed have been, the buyer can come closer to judging her real value as a milk and butter making machine than by any study of mere outward appearance. It has been truly said that the inside of a cow is the darkest place on earth and that, therefore, outward appearances are very deceitful. The scales and the Babcock test are the best guides, particularly the more accurate yearly tests which are to be emphasized rather than short tests.

Beginners in dairy farming should gain their experience and establish their reputation by starting in with grade cows and a pure bred bull. Later, by purchasing one or two excellent cows from time to time, they may get gradually started in pure breds. By keeping a record of the production of each cow and noting the relative cost of production much can be accomplished in a few years. As former Governor Hoard said: "It is better to grow into dairy farming than to go into it."

SELECTION OF BULLS.

In selecting bulls to head the herd it is needless to say that only pure bred sires should be used.

Breed type and individual characteristics are entitled to due consideration, yet it is difficult to prophesy by the outward looks and appearance of a dairy bull what sort of calves he will beget from a producting standpoint. More attention should be given to the performance of his female ancestors, and especially his dam. A great producing cow is very likely to reproduce her characteristics through her sons, so by all means, after careful study of the bull himself, his dam should be investigated—study her form, milk producing machinery, and learn her record of performance. Many of the best breeders of dairy cattle select bulls almost entirely on the individuality and performance of the dams. However, the individuality of the bull himself is important also.

As for age, it is safe to say better results will be attained by buying mature, tried bulls, although this is not the rule usually followed. Bulls capable of begetting useful daughters are plenti-

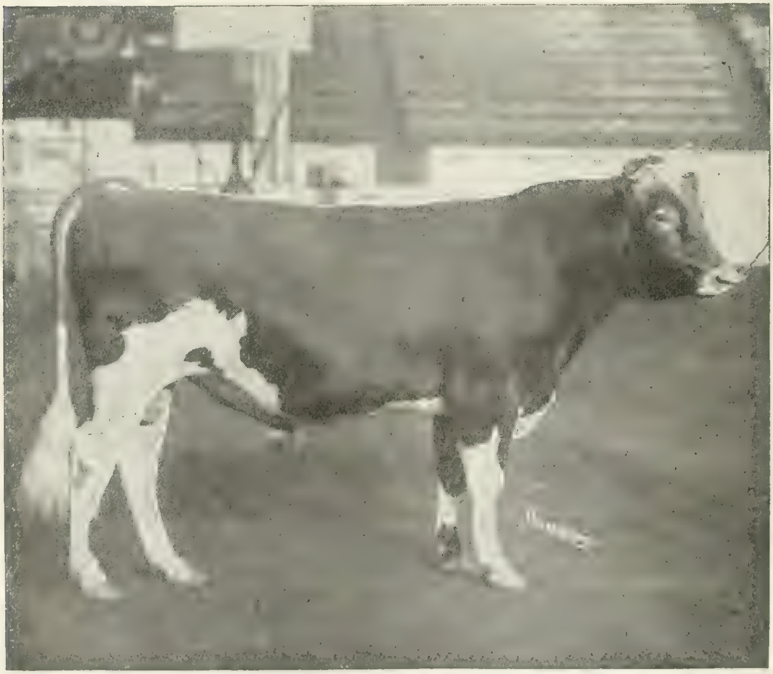


Fig. 3. Imp. Rouge II's Son, owned by Iowa State College. First prize two year old Guernsey bull at 1912 National Dairy Show. A son of Rouge II of the Brickfield.

ful, but those capable of begetting daughters that are phenomenal workers are few indeed, and the majority of these are lost before their full worth has been determined.

In selecting a bull to head the herd there must always be borne in mind the old saying, "The bull is half the herd." Much data is at hand showing the great difference that exists between dairy bulls in their ability to sire heavy producing heifers and a good dairy sire that will raise the average production of the herd 50 to 100 pounds of butter fat is a bargain at almost any price, while a so-called "cheap" bull may be a source of great loss.

In building up the dairy herd and selecting animals, extreme care is necessary to guard against disease, and especially the most common disease among them, tuberculosis. In buying animals, buy them subject to the tuberculin test, which should be made by a reliable veterinarian, who should give the buyer a certificate stating the temperature before and after the injection of the tuberculin. Reject all animals that react when conditions are known to be normal. Never allow an animal known to be infected with tuberculosis to step on the farm. All animals purchased, even though accompanied by a health certificate, should be isolated and tested again after they have been on the farm ninety days.

Contagious abortion is also very prevalent on dairy farms and much precaution must be exercised to guard against buying animals that will bring the germs of this destructive disease to the farm. In dealing with scrupulous breeders their word will generally suffice, but in all cases it is wise to isolate the new animals brought to the farm.

SELECTION OF FEED-STUFFS.

In securing the lowest possible cost of production, and ultimately the largest profit, from the herd, the proper selection of feeds is important. The primary object of the feeder, in all cases, is the maximum production of milk for least expenditure of feed. While each feed stuff is fairly uniform, so far as nutrient content, effect on the system and palatability are concerned, it is impossible to recommend a particular ration which will prove most economical and efficient at all times, because feed stuffs vary in price in different seasons and localities, and also because the feed requirements may vary with each individual cow.

The general requirements which should be met by rations for dairy cows are as follows: Palatability, variety, bulk, succulence, balance of nutrients, proper effect upon the system and economy.

Palatability is a factor of great importance, for, no matter how good the ration is from the standpoint of digestible nutrients contained, the best results can not be expected unless it appeals to the cow's appetite. To secure this palatability, feeds of good quality liked by the cow should be fed in a clean manger. All grains, such as oats, barley and corn, give best results when ground.

A cow soon tires of a ration made up of but one or two feeds and as radical or frequent changes in the ration are not conducive to the best results, it is important that feeds be so combined in the ration as to give variety. This variety is essential for the dairy cow because, unlike the beef steer, she is on feed for a long period and for successive periods.

Bulk is required to help make digestion in the roomy digestive tract as thorough as possible; moreover, the bulky feeds grown upon the farm are the cheapest feeds. When bulk is lacking the digestive juices do not act as thoroughly upon the small, compact food mass and all the digestible nutrients cannot be utilized. This bulk is obtained not only through feeding alfalfa and clover hays and corn silage, but also by making the grain ration rather bulky. Corn and cob meal, ground oats and bran are bulky and all are good for the dairy cow.

Succulent feeds are very essential in profitable milk production. During the summer months succulence may be obtained from pasture grass, until the hot, dry weather makes it necessary to add corn silage or soiling crops. For winter feeding, corn silage is the most economical source of succulence under most farm conditions. Succulence is needed partly because the dairy cow is producing a product high in per cent of water, and partly because it has a good effect upon her system.

WHAT "BALANCE" MEANS.

By balance of nutrients, is meant a proper proportion between the digestible nutrients, protein, carbohydrates, fats and ash. The best combination will vary with the individual cow, the quantity and quality of milk she gives, the prices of feed stuffs, and her condition as to whether she is pregnant or not. Cows that have a tendency to become too fleshy need less carbohydrates and more protein in proportion, and cows with the opposite tendency more carbohydrates. As milk contains relatively large amounts of protein, fat and ash, the ration fed should carry a liberal supply of these nutrients so that the cow will not have to draw from her own body to make up a deficit. At the Wisconsin Experiment station it was found that in 110 days a dairy cow, fed a liberal ration yet one deficient in lime, gave up 25 per cent. of all the line of her skeleton. Similar results have been secured where cows have been fed rations sufficient only to maintain their bodies and not for milk production. Body tissue is sacrificed in order that the cow may secrete milk. Many of the cows on the Iowa farm today are doing this same thing. They produce milk in fair quantities for a few months after calving, not because of the ration made up solely of ear corn, timothy hay and corn stalks, but in spite of it. However, after they have drawn upon their own bodies as long as they can they rapidly decline in milk flow after five or six months. In many cases this lack of persistency is due to inherited characteristisc as well as to failure to feed especially for milk production.

The proper effect of feeds upon the digestive system can be secured by a study of the characteristics and influence of different feeds. It is important to consider whether the feed or combination of feeds will have a cooling, laxative effect upon the digestive tract, or whether it will be heating and constipating.

The ration must be economical. In selecting feed stuffs, thought must be given to the relative values of different feed stuffs as well

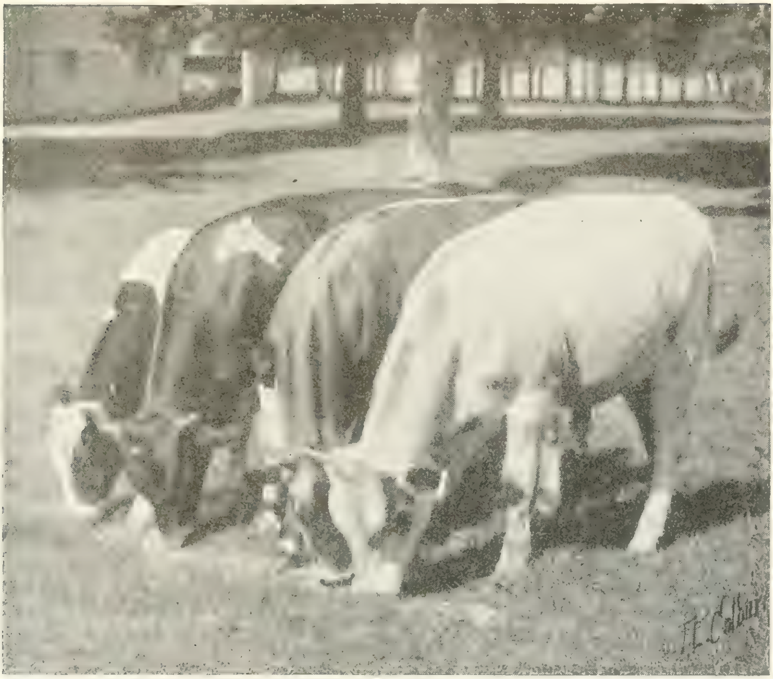


Fig. 4. An excellent young bull of each of the four leading dairy breeds. Owned by Iowa State College.

as to their price per pound. Home grown feeds should be used so far as practicable. Where the dairy farm produces clover, alfalfa and oat and pea hays a large amount of the only nutrient the Iowa farmer needs to buy, protein, may be secured cheaply.

CHARACTERISTICS OF ECONOMICAL IOWA FEEDS.

The characteristics of the feeds which are most economical and efficient for the Iowa dairy farmer are given herewith:

Corn: In the corn belt corn must form the basis of the economical ration because it is the cheapest source of the energy supplying carbohydrates or starchy materials. However, it is necessary that feeds rich in protein and ash be fed with it for best results. The too common practice of feeding only timothy hay and corn fodder to milk cows is bad, as it keeps many cows from making a good record and returning a profit. In winter feeding corn may be fed in the form of corn and cob meal, as corn and cob meal is usually equal, pound for pound, to corn meal or corn chop when fed to dairy cows. This is due to the fact that the cob present adds bulk and by separating the starchy particles insures more complete digestion. In summer feeding cracked corn is usually considered preferable, because the cow is getting a great deal of bulky grass.

AVERAGE DIGESTIBLE* NUTRIENT CONTENT OF LEADING DAIRY FEEDSTUFFS

(Taken from Henry's Feeds and Feeding.)

Feeds	Total Dry Matter in 100 Lbs.	Total Digestible Nutrients in 100 Lbs.			Total Ash in 100 Lbs.	Weight per Quart
		Protein	Carbohydr'te	Fat		
Concentrates						
Corn, whole	89.4	7.8	66.8	4.3	1.5	1.7
Corn meal	85.0	6.7	64.3	3.5	1.4	1.4
Corn and meal cob	84.9	4.4	60.0	2.9	1.5	1.3
Gluten feed	90.8	21.3	52.8	2.9	2.0	1.3
Gluten meal	90.5	29.7	42.5	6.1	1.5	1.7
Corn bran	90.6	6.0	52.5	4.8	1.2	--------
Wheat, whole	89.5	8.8	67.5	1.5	1.8	1.9
Wheat, bran	88.1	11.9	42.0	2.5	5.8	.5
Wheat shorts	88.8	13.0	45.7	4.5	4.4	.8
Wheat Midlings	90.0	16.9	53.6	4.1	3.2	1.0
Rye	91.3	9.5	69.4	1.2	2.1	1.7
Barley	89.2	8.4	65.3	1.6	2.5	1.2
Emmer	92.0	10.0	70.3	2.0	3.9	1.1
Oats, whole	89.6	10.7	50.3	3.8	3.2	1.2
Oats, ground	88.0	10.1	52.5	3.7	3.2	.8
Canada field peas	85.0	19.7	49.3	0.4	2.4	1.9
Cow peas	85.4	16.8	54.9	1.1	3.2	1.9
Soy beans	88.3	29.1	23.3	14.6	4.8	1.9
Kaffir corn	90.1	5.2	44.3	1.4	1.6	1.7
Linseed meal OP.	90.2	30.2	32.0	6.9	5.5	1.1
Linseed meal NP.	91.0	31.5	35.7	2.4	5.5	1.1
Cottonseed meal	93.0	37.6	21.4	9.6	6.6	1.5
Dried brewer's grains	91.3	20.0	32.2	6.0	3.7	.6
Malt sprouts	90.5	20.3	46.0	1.4	6.1	.6
Dried distiller grains	92.4	22.8	39.7	11.6	2.0	.6
Dried beet pulp	91.6	4.1	61.9	--------	4.5	.6
Alfalmo	90.9	9.8	40.8	0.9	11.2	--------
Roughage						
Alfalfa, West United States	93.2	11.1	39.1	0.6	10.6	--------
Red clover	84.7	7.1	37.8	1.8	6.2	--------
Cow pea hay	89.5	5.8	39.3	1.3	14.2	--------
Soy bean hay	88.2	10.6	40.9	1.2	7.0	--------
Oat and pea hay	89.5	7.6	41.5	1.5	7.1	--------
Oat and vetch hay	85.0	8.3	35.8	1.3	7.4	--------
Oat hay	86.0	4.7	36.7	1.7	5.7	--------
Timothy hay	86.8	2.8	42.4	1.3	4.4	--------
Millet hay	86.0	5.2	38.6	0.8	7.9	--------
Corn fodder	57.8	2.5	34.6	1.2	2.7	--------
Corn stover	59.5	1.4	31.2	0.7	3.4	--------
Sorghum hay wheat straw	90.4	0.8	35.2	0.4	4.2	--------
Oat straw	90.8	1.3	39.5	0.8	5.1	--------
Rye straw	92.9	0.7	39.6	0.4	3.2	--------
Succulent Feeds						
Green corn	20.7	1.0	11.9	0.4	1.2	--------
Green sweet corn	20.9	1.2	12.6	0.4	1.3	--------
Sorghum	20.6	0.6	11.6	0.3	1.1	--------
Canada field peas	15.3	1.8	6.9	0.3	1.3	--------
Cow peas	16.4	1.8	8.7	0.2	1.7	--------
Soy beans	24.9	3.1	11.0	0.5	2.6	--------
Alfalfa	28.2	3.6	12.1	0.4	2.7	--------
Clover	29.2	2.9	14.9	0.7	2.1	--------
Oats, in milk	37.8	2.5	18.2	1.0	2.5	--------
Oats and peas	20.3	1.8	10.2	0.4	1.6	--------
Oats and vetch	20.0	2.3	10.0	0.2	1.8	--------
Millet, barnyard	25.0	1.6	14.4	0.3	1.9	--------
Wet brewers' grain	23.0	4.9	7.6	1.7	1.0	--------
Wet beet pulp	10.2	0.5	7.7	--------	0.6	--------
Corn silage	26.4	1.4	14.2	0.7	2.1	--------
Red clover silage	28.0	1.5	9.2	0.5	2.6	--------
Corn cannery refuse, husk silage	16.2	0.4	10.1	0.4	0.6	--------
Corn cannery refuse, cob silage	25.9	0.3	13.7	0.9	0.5	--------
Pea cannery refuse silage	23.2	2.1	13.1	0.8	1.3	--------
Corn and soy bean silage	21.0	1.6	13.2	0.7	2.4	--------
Mangels	9.1	1.0	5.5	0.2	1.1	--------
Sugar beets	13.5	1.3	9.8	0.1	0.9	--------
Turnips	9.9	0.9	6.4	0.1	0.9	--------
Rutabaga	11.4	1.0	8.1	0.2	1.2	--------
Cabbage	10.0	2.3	5.9	0.1	0.9	--------
Potatoes	20.9	1.1	15.7	0.1	0.9	--------

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*The digestible nutrients in feed are the digestible portions of each nutrient in that feed.

Gluten Feed: This corn by-product is fed by a great many dairymen. In most seasons it is a fairly economical source of protein, but varies greatly in price. Being a corn by-product, it should not be the only concentrated feed used to balance the corn ration, as it does not add sufficient variety.

Oats: There is no better grain than oats for cows producing milk, cows about to freshen, or young, growing cattle. It will be noted from the preceding table that they are rich in the desired nutrients. However, often oats are rather high in price compared to many other feeds and consequently can be fed only in limited amounts. There are oat by-products on the market, but they are of little value for milk production.

Barley: This is a common feed where corn is not successfully grown, as in the west and north and in northern Europe. Rolled barley, rather than ground, is usually fed. Barley by-products are commonly used for dairy cows. The wet barley products must be fed fresh and therefore are available only near breweries. Dried malt sprouts and dried brewer's grains are shipped long distances and fed with profit. The dried brewer's grain ranks with bran and oil meal in palatability, has a good effect upon the system and is fairly high in digestible protein. Dried brewer's grains are oftentimes sold under many different brand names. Dried Distiller's grains are a very valuable feed for dairy cows, being light and bulky and containing a high percentage of valuable nutrients.

Wheat: This is an excellent feed but, of course, is usually too high in price to be fed except when damaged.

Bran: Very wide use is given to bran for dairy cows, as well as young, growing animals. It is fairly rich in valuable constituents, palatable, bulky, and has a laxative, cooling effect on the digestive tract. However, bran is rather an expensive feed. In 100 pounds of it there is less than 12 pounds of digestible protein, while there are more than 20 pounds of digestible protein in gluten feed and dried brewer's grains, over 30 pounds in oil meal, and over 37 pounds in cottonseed meal. Except in the case of cows just before and after calving, cows on official test and young, growing animals, other feeds return greater profits than bran. Wheat middlings and shorts are comparatively high in protein, yet are not as palatable as many feeds for the dairy cow and should be fed in very limited amounts, if at all.

Cottonseed Meal: This is one of the richest and heaviest of feeds. If of good quality, and fed in limited amounts with other feeds, it is especially valuable for dairy cows, being one of the cheapest sources of protein. When wet, mouldy, or if it has heated, it should not be fed. Cottonseed meal is very constipating in its effect upon the digestive tract and, as it contains a poisonous substance, it should not be fed to swine, young calves or cows soon to freshen. When fed to cows producing milk some cooling laxative feed, such as silage or oil meal, should be fed also and it is best not to feed more than 2 to 2 1-2 pounds per cow per day.

Linseed Oil Meal: One of the best dairy feeds, is linseed oil meal, as it is high in desirable nutrients, and palatable, and has a laxative, cooling effect upon the digestive tract. One to two pounds will improve any ration. Old processed, rather than new, should be purchased, as it has a higher feeding value.

Alfalfa Feeds: There are many alfalfa feeds on the market and, while they are palatable, most of them are expensive from the standpoint of nutrients contained.

IOWA HAYS AND THEIR VALUE.

Alfalfa: It is conceded by practically all that alfalfa is the very best hay that can be fed to dairy animals. It is rather rich in valuable nutrients, very palatable, has a good effect upon the system, and, as it can be grown upon any Iowa farm, it is a very economical feed to help balance the corn and silage ration. In 1912 the field on the college farm yielded 7.03 tons of field cured hay per acre.

Clover: This is an excellent hay and is second to alfalfa in all the points brought out above. Care should be taken to cut it at the right stage of maturity for best results.

Oats and Canada Field Pea Hay: This makes an excellent substitute for alfalfa and clover hay where the acreage of these crops is too small to supply the dairy herd. Excellent results have been secured at the college dairy farm from sowing 1 1-2 bushels of oats and 1 1-2 bushels of Canada field peas per acre. These are best sown with a grain drill, sowing the peas first, and deeper, than the oats. To make the best hay it should be cut when just passing from the milk to dough stage.

Timothy: While timothy is grown upon nearly every Iowa farm and has a high value as a feed for horses, it should not have a place in the ration of the dairy cow. It lacks the nutrients which the milk producing cow and young, growing animals must have; in addition, it is not very palatable and has a binding effect on the digestive system instead of the beneficial effect of alfalfa or clover. The composition table previously given shows that a ton of alfalfa hay contains about four times as much digestible protein as timothy, and seven or eight times as much ash or mineral matter. The man who has only timothy hay for his cows had best sell a portion of it and purchase with the proceeds alfalfa or clover hay and next season get started growing one of the other hay crops.

Straw, corn stover, etc., should not be fed in large quantities as the sole roughage, but the cows will oftentimes relish small quantities if fed in addition to their silage and alfalfa or clover hay.

SILAGE AND ITS EFFICIENCY.

No dairy farm is complete in its equipment without at least one silo for winter feeding and one with a smaller diameter for summer feeding. The characteristics of good corn silage make it pre-eminently a feed for dairy cattle. It is palatable, succulent, bulky, beneficial to the digestive tract, and economical. These are all essential characteristics of the ration which is essential to the largest and most economical flow of milk. Most dairy farmers in the corn belt realize that to secure the largest possible profits from a herd of cows they must feed corn silage. In regions where corn cannot be grown successfully for silage, many dairy men have silos in which they cure other crops.

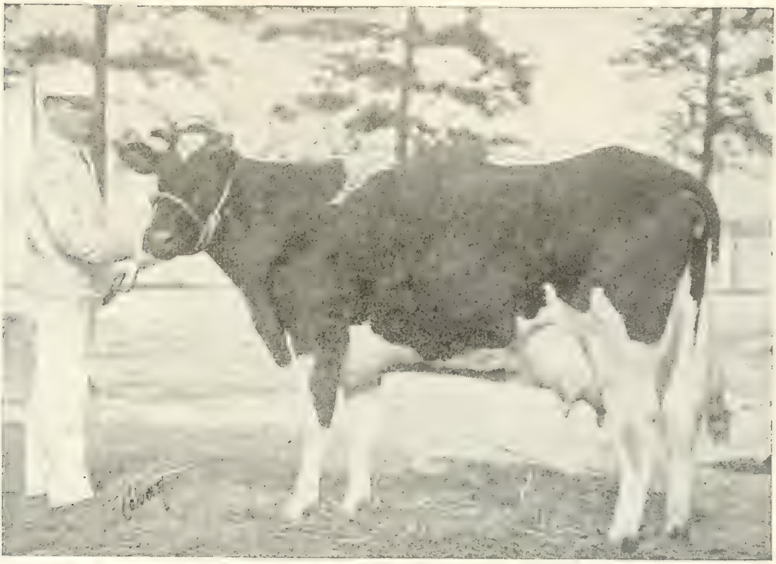

Fig. 5. Holstein cow—Geneseo Belle Polkadot, owned by Iowa State College and holder of the following official records:

	Pounds Milk	Pounds Butter Fat	Average Test
1 day	108.8	4.1	3.76
7 days	733.6	27.508	3.74
30 days	2,773.0	98.0	3.53
365 days	20,816.2	732.94	3.35

Experiments carried on at the different experiment stations show conclusively that silage is far superior to shock corn or hay in milk production. Silage fed cows produced from eleven to eighteen per cent. more milk than cows fed fodder from the same acreage.

The principal reason why a dairy cow increases her milk flow when she is turned out to pasture in the spring is that she is receiving a succulent feed. Thus, to secure a large and persistent flow of milk during the winter months some succulent feed must be secured to take the place of the pasture grass of summer. The two most common succulent feeds for winter are corn, silage and roots. Experimental work has proved that the silage, as compared to roots, yields more heavily per acre, costs much less and gives equal results from similar weights of dry matter. Silage is also very desirable for the herd during the latter part of July and the month of August, when the pastures are usually very short, due to hot weather and lack of rainfall. The value of silage or soiling crops at this season does not lie solely in the temporary increase in milk flow, but also in maintaining it, if a cow once declines in her milk flow it is practically impossible to bring her back to normal for the remainder of her lactation period.

EFFECTS OF SILAGE ON MILK.

Contrary to the opinion formerly held, milk from silage fed cows is not inferior in flavor or odor to milk from cows fed dry feed. The condensed milk companies which formerly did not favor milk from silage fed cows are now advising their patrons to put up silos. Great care should be taken, however, to prevent the odor of silage from contaminating the freshly drawn milk, which takes up odors very quickly. It is best to feed the silage after milking and just what will be eaten up clean at that feed. The silos should be shut off from the barn proper. The idea still held by some, that corn silage will destroy the teeth and digestive tract of the cow and induce such diseases as tuberculosis, is erroneous.

ROOT CROPS.

Many of the root crops furnish succulence to the dairy cow in very acceptable form, yet for the practical man they are too expensive as compared to corn silage to be fed in large quantities or in the place of silage.

BEET PULP.

Beet pulp is a very good feed and farmers living near a beet sugar factory usually secure the wet pulp for a very reasonable price. Dried beet pulp is an excellent feed and when one cannot have corn silage it proves to be a very valuable substitute. It is best when soaked twelve hours before feeding, allowing from four to seven pounds of dried beet pulp per cow per day when on full feed.

SOILING CROPS.

The pastures upon most Iowa farms do not furnish enough feed for the cattle during the hot, dry months of summer. The problem of supplying the necessary succulent feed most economically is important and may be solved by one, or a combination, of the following methods:

1. Better care and management of pastures.
2. Use of summer silo.
3. Use of soiling crops.

Better care and management of pastures is absolutely necessary to secure the best results from farms. In every neighborhood a practical demonstration may be found that a little care given to a pasture will greatly increase its production of feed. But the pasture crop in itself is not enough for dairy farmers or for many beef cattle growers. To secure the greatest possible returns from their land, they find it to their advantage to keep more cattle than they can properly pasture without the aid of silage or soiling crops. The use of silage or soiling crops upon dairy farms results in a saving of land, fencing, feed and manure, and in greater and more profitable production of milk.

SILAGE OR SOILING CROPS.

Whether corn silage or soiling crops will be more economical and efficient in supplementing the pasture will depend somewhat on specific conditions. The experimental work which has been conducted along this line has not furnished very conclusive evidence in favor of either. Evidently a silo small in diameter filled for summer use is the most satisfactory and economical solution of the problem on the average Iowa farm. Most of the soiling crops require more labor in getting them to the animals than the average farmer, who practices mixed farming, wishes to spare from the field work in the busy season of the year.

However, the man who has a large herd of dairy cattle and wishes to secure the best possible returns from his acreage will find it to his advantage to grow some soiling crops. There is nothing better than fresh, palatable, nutritious green feed to stimulate milk production. Then, too, by having in each mixure a leguminous plant, soiling crops can be grown that are superior to corn silage in balance of nutrients. Another class of farmers who profit by the use of soiling crops are the renters who cannot persuade their landlords that silos are necessary fixtures upon farms. To these classes must be added the men who have not put up silos yet and who wish to grow crops to feed in addition to their pastures during the coming summer.

SOILING CROP SYSTEM ON COLLEGE DAIRY FARM.

During the past three years soiling crops have been successfully grown and used upon the Iowa State College dairy farm at Ames. Such varieties have been chosen as would furnish a succession of green feed to supplement the limited acreage of blue grass pasture. Under this system the cows have been turned into the pasture nights and forenoons and then put into the barn about 2:30 p. m. and given a liberal allowance of the freshly cut green feed. Under ordinary conditions, the above, or partial, soiling system is more satisfactory than to keep the cows confined all the time and haul all the green feed to them as is done on some of the larger dairy farms. It is also much more satisfactory than to feed the cows the green feed on the ground in the pasture, as is sometimes done, with much soiled and wasted feed as a result.

Increased production of milk from decreased acreage has been the result secured at the college dairy farm from this system of soiling crops. By bringing the cows into the barn at the time of day when the heat and flies are especially troublesome and spraying them to remove flies, it is made possible for them to eat their feed in comfort. Thus they are enabled to keep up a normal flow of milk when they would ordinarily decline seriously. Also, because these palatable green crops are used, less grain needs to be fed the heaviest producers, while ordinary producers may be kept up in production and condition without grain.

In 1911 thirty-seven cows were kept on 19½ acres of pasture and in addition were supplied with the soiling crop from 8 acres. Counting the land devoted to both pasture and soiling crops each cow was kept the entire season on .74 of an acre. The value of the soiling crops may be fully realized when it is remembered that the summer of 1911 was one of scanty rainfall and many farmers in the vicinity of Ames were allowing 2½ to 3 acres of pasture for each cow. In 1912, 45 cows were kept on the 19½ acre pasture and in addition were allowed a trifle over 6 acres of soiling crops —or each cow was kept on about .6 of an acre. In addition to this, in 1912 the cows grazed on a 15 acre meadow for a few weeks, beginning about the middle of August. It was found in 1912 that the entire cost of pasture and soiling crops for each cow, counting rent of land, labor, seed, etc., was only $6.62 for the entire pasture season.

LABOR NECESSARY FOR SOILING CROPS.

The objection usually raised to growing soiling crops is the amount of labor necessary to cut and haul the feed to the cows each day. On the college dairy farm this takes two men about one and one-half hours each day. In 1912, with 45 cows, it was found that a team and mower could be used to good advantage in cutting the daily allowance of feed. Considering the value of soiling crops in increasing production and decreasing cost of production of dairy products, it will be found that excellent returns are secured for time spent.

SUCCESSION OF SOILING CROPS USED ON THE IOWA STATE COLLEGE DAIRY FARM.

Approximate Time of Cutting	Crops	Approximate Time of Sowing	Rate of Seeding per Acre	Avr'ge Yield of Green Food per Acre
June 10 to June 15	Alfalfa	Spring or August	20 lbs.	8 tons
June 15 to July 5	Oats and Canada Field Peas	April 5	1½ bu. oats 1½ bu. peas	5 tons
July 1 to July 10	Oats and Canada Field Peas	April 20	1½ bu. oats 1½ bu. peas	5 tons
July 10 to July 15	Alfalfa	Spring or August	20 lbs.	4 tons
July 10 to July 20	Amber Fodder Cane	May 5	70 lbs.	20 tons
July 15 to Aug. 15	Fodder Cane and Cow Peas	May 15	30 lbs. cane 1 bu. cow peas	12 tons
Aug. 15 to Sept. 20	Fodder Cane and Cow Peas	June 10	30 lbs. cane 1 bu. cow peas	12 tons
Sept. 20 to heavy frost	Millet	July 10	3 pecks	3 tons

PREPARING THE COW FOR HER YEAR'S WORK.

The proper time to begin feeding a cow for milk production is six to eight weeks prior to freshening. She should have at least this length of time to rest and prepare for the next lactation period. The feeds given at this time should meet the following requirements: Rest and cool out the digestive tract, supply nourishment for the growth of the foetus or unborn calf, and build up the flesh and strength of the cow herself.

For the cows that are to freshen during the summer or early fall it is a good plan to have a small pasture set aside so that they may have abundance of pasture grass and not be molested by the other cows. In addition to this a few pounds of ground oats and in some cases a small quantity of bran will be sufficient. Cows that are to freshen during the winter should receive from 20 to 25 pounds of corn silage, all the clover or alfalfa hay they desire and a grain mixture of 3 parts ground oats, 2 parts bran and 1 part oil meal. The amount of grain per day is to be governed by the individual animal. Animals thin in flesh may be given a small quantity of corn but should not be crowded, but rather fleshed up gradually. Timothy hay and cottonseed meal are not desirable as they are rather constipating, while laxative feeds are needed at this time. Too large a quantity of corn is likely to have a bad effect upon the system. It is well to reduce the ration slightly just prior to calving as by so doing the danger of milk fever and after-calving troubles is decreased to some extent.

A few days before calving put the cow in a clean, disinfected, well bedded box-stall. if her bowels are not moving freely, a dose of 3-4 to 1 pound of epsom salts or one quart of raw linseed oil will prove very beneficial. A grain ration of 2 parts bran and 1 part oil meal is very good at this time.

For a few days after calving the cow's drinking water should be luke warm. In addition to alfalfa or clover hay and a small quantity of silage, she should be fed bran mashes or a small allowance of bran, oil meal and ground oats. If the cow does not pass the after-birth promptly and the man in charge does not understand the anatomy of the reproductive organs, a competent veterinarian should be called; that should be done also when the cow has difficulty in calving.

CARE OF COW FIRST THIRTY DAYS AFTER CALVING.

If the cow has been properly cared for the first three days she may then be placed on dry and more solid food. The manner in which she is fed during the next thirty days determines largely the character of the work she will do during her lactation period. Experienced feeders of beef cattle realize that thirty days are required to get steers on full feed, and likewise the dairy cow needs to be given thirty days. Without doubt parturition weakens the digestive apparatus and heavy feeding soon after calving is liable to be followed by indigestion, bloat or impaction. During the first thirty days after parturition the maternal instinct is at its highest pitch and during this time, if properly cared for, the cow can be brought to her greatest possible milk flow.

To do this, the feeds must be suited to the individual cow's needs. Beginning on the fourth day with five pounds of grain daily, the ration should be increased slowly—say at the rate of 1-2 pound each alternate day. This rate of increase is rapid enough, for the cow will respond as well to a half pound increase as she will to a pound. This increase may continue just as long as the cow continues to increase profitably in her milk flow. When she ceases to respond, then the feed should be lessened in the same gradual manner for a few days and it will, as a rule, be noted that the cow will further increase in milk flow. The feed given on the day she begins to decline in milk determines practically the amount of grain she should receive. Much less than this amount will not compel her best work and any additional feed will be worse than wasted.

The exact amount and quality of the food will be determined by the condition and individuality of the cows. Seldom do two cows demand to be fed in exactly the same way. Cows inclined toward beefiness require a narrow ration, or one containing a proportionately large amount of protein; cows of the strictly dairy type, inclined to work hard and become thin in flesh, need to be fed more extensively of foods rich in carbohydrates. Cows of large capacity and the ability to produce great volumes of milk require more than cows with less capacity and ability.

AMOUNT TO FEED.

The amount of feed given the cow is of great importance. The average dairy cow requires about 50 per cent of a normal ration for maintenance. Consequently, if this cow is fed but one-half the normal ration, she receives simply enough to maintain her body and the milk she gives will be produced at the expense of her body tissues. Under such conditions the flow of milk would no doubt keep up for a time, but the animal would not be able to continue the work and her strength for a very long period. This is one of the chief reasons why cows on many farms drop off rapidly in milk flow after the first two or three months of their lactation periods. It is poor economy to under-feed the dairy cow because her maintenance requirements for the year will remain the same and her milk production will be certain to suffer.

There are cows that are over-fed, thus receiving food in addition to the requirements for maintenance and milk production, and this extra food is used for fat formation. This happens where all the cows are fed alike, irrespective of lactation period and production. This is also poor economy, because when many cows start to "flesh up" they continue to do so at the expense of milk production.

The best ration will depend upon the condition, individuality and record of the cow, but it is a common practice to allow 1 pound of grain for each 2 1-2 to 4 pounds of milk produced, depending upon the richness of the milk, or 7 pounds of grain for each pound of butter fat. In addition to this grain ration, the average cow should receive 1 to 1 1-2 pounds of clover or alfalfa hay and 2 1-2 to 3 pounds of corn silage for each 100 pounds live weight.

Because the prices for the different feeds vary so much from year to year and from one locality to another, it is impossible to designate just what grain mixtures are most efficient and economical. However, the following mixtures meet the requirements of a good grain mixture to be fed in conjunction with corn silage and alfalfa hay, provided the feeds can be bought at a price which will make the ration comparatively economical:

Sample Mixture A.

300 pounds corn and cob meal
200 pounds ground oats
100 pounds cottonseed meal
100 pounds oil meal

Sample Mixture B.

400 pounds cracked corn
100 pounds oil meal
200 pounds gluten feed
100 pounds dried brewer's grains

Sample Mixture C.

200 pounds corn and cob meal
100 pounds ground oats
100 pounds gluten feed
100 pounds cottonseed meal

Sample Mixture D.

400 pounds corn and cob meal
100 pounds oil meal
100 pounds bran
200 pounds cottonseed meal

FEEDING GRAIN IN SUMMER.

Dairy farmers are divided in their opinion as to whether or not it pays to feed grain when the cows are on pasture. The practice of many successful dairymen, and the one in vogue at the college dairy farm, is to give the animals no grain the first month they are on grass. Thus they secure a rest. Later a small quantity of such feeds as cracked corn, cottonseed meal, ground oats, etc., should be given the heavier producers in addition to the silage or soiling crops to keep the cows up in flesh and production.

ENCOURAGING PERSISTENCY OF LARGE MILK FLOW.

The persistent cow, or the one that milks well for the entire lactation period, is the profitable cow. In order to induce persistency the following points must be observed in addition to weeding out the non-persistent animals:

1. Proper feeding.
2. Breeding to calve in fall of year.
3. Proper milking and manipulation of udder.
4. Regularity.
5. Kindness.
6. Grooming.
7. Watering.
8. Salting.
9. Keeping flies from cows.

Proper feeding must extend throughout the year and the ration changed to meet the changing needs of the cow. If the cow begins to fatten, lessen the carbohydrates and increase the protein in the ration. If she begins to get poor, increase the carbohydrates. Regulate the amount of feed by the amount of milk and butter fat produced. Cows producing milk rich in butter fat need more grain in proportion than do cows producing a low testing milk.

Breeding to Calve in Fall: Cows bred to calve in the fall will yield from 15 to 25 per cent more milk in the year than if they freshened in the spring, because in the former case when they go out on pasture in the spring they will increase slightly in milk flow, while if they freshen in the spring they are worried by the hot weather and flies, and oftentimes by a scarcity of feed, and soon start to decline in flow. Another factor of importance in this connection is the fact that irrespective of time of freshening, cows will give a slightly higher per cent of fat during the winter months than during the hot summer months. There are many other reasons why it is better to have the majority of the cows calve in the fall; for instance, the higher price paid for butter fat during the winter months, the time available for looking after the herd during the winter months, and the fact that calves born in the fall have a better chance for growth during the first year.

Milking and Manipulating the Udder: The cow should be milked by the same man at the same time each day, and always milked

Fig. 6. Spraying the cows and feeding them soiling crops increases their comfort and greatly increases production and profit.

dry, for production is influenced as greatly by proper milking as by proper breeding. After the milk has apparently all been drawn, the udder should be rubbed and massaged, for this stimulates the milk producing glands. Regularly manipulating the udder will add to the persistency with which the cow milks and to the richness of the milk, because the last drawn milk is richest in butter fat.

Regularity: Regularity has been mentioned in several connections, and here it is sufficient to say that no one will be a very successful dairy farmer who is not regular with every detail of the work.

Kindness: No farm animal responds so quickly to kindness as the dairy cow. Harsh words, noise, and milk stools improperly used always decrease the milk flow greatly.

Grooming: Cows groomed will yield more than enough additional milk and butter fat to pay for the ten or fifteen minutes of extra labor daily, not to mention the difference in the cleanliness of the milk and in their appearance. Grooming stimulates the circulation of the blood and in this manner aids in food digestion and milk secretion, as well as in general health.

Watering: In winter cows should have drinking water that is warmed and at all times pure, clean and fresh. The importance of this is realized when it is remembered that about 87 per cent of normal milk is water. A short time ago it was found that one of the college Holstein cows which was producing 100 pounds of milk per day was drinking from 200 to 250 pounds of luke warm water per day. It is readily seen that if that cow had been forced to drink ice water out of a tank, as many cows in this state are forced to do, the milk flow would have been materially decreased.

Salting: Salt is quite essential to best results and should always be available to the cow. Keep salt in front of the cow rather than mix it with her grain ration.

Keeping the Flies from Cows: By preventing flies from tormenting the cows much greater flow of milk is secured during the summer months and the remainder of the lactation period. The following home-made mixture has given good results at the college dairy farm. It is better than several other mixtures tried, and quite as efficient as the prepared sprays costing a dollar per gallon. It is made as follows:

1½ quarts of any standard coal tar dip.
1½ quarts of fish oil.
1 pint of oil of tar.
1 quart of coal oil.
½pint of oil of pennyroyal.

Mix in ten gallons of luke warm soft water in which a bar of laundry soap has been dissolved.

Spray twice a day, in the morning after milking and in the afternoon when cows are brought in for silage or green feed. When a half barrel cart with spray nozzle attachment is used two men can spray a herd of forty cows in ten minutes. This mixture is not perfect and does not keep all the flies away and, furthermore, it leaves the coat rather harsh and causes dust to adhere; however, it is very beneficial and practical.

INFLUENCING BUTTER FAT PRODUCTION.

There is only one way that butter fat can be increased with certainty and in a large way. That is by obtaining a large and persistent flow of milk. However, it is evident that each of the following factors may have a slight influence upon the per cent of fat in the milk: breed, individuality, age, period of lactation, condition, excitement, frequency of milking, season of year, temperature, feed, whether first or last drawn milk and grooming.

Breed and Individuality: The influence of breed and individuality need not be discussed, as the variations due to these factors are known to all.

Age: Young heifers will nearly always produce milk testing a higher per cent of fat during their first lactation period than during succeeding lactation periods, other conditions being the same. In her two year old form the heifer will usually produce about 70 per cent as much butter fat in a year as she will as a mature animal.

Period of Lactation: The fact that cows produce a milk richer in butter fat toward the close of their lactation periods is well known. However, cows that are in high condition at calving time will produce for a time milk testing much higher than their average for the lactation period.

Condition: The physical condition of the cow may affect the test slightly. Cows that are ill will usually test a trifle higher than their average.

Excitement: Cows that are excited, either due to some disturbance or to the fact that they are in heat, will usually test slightly higher than the average, but some individuals test lower.

Frequency of Milking: It is a common practice to milk cows on official or yearly record work three and sometimes four times per day. It is noticed that the great majority of the cows will give the highest per cent of fat following the shortest interval between milkings. Thus a slightly higher per cent of fat as well as a larger quantity of milk may be secured by these frequent milkings, but with the average cow under farm conditions not enough more to pay for the extra labor.

Seasons of Year and Temperature: It has been found that irrespective of the time of calving, cows will give a slightly higher test during the winter months than during the hot summer months and, furthermore, that on very hot days the per cent of fat will usually show a marked decrease.

Feed: Many have contended that it is possible to increase the percentage of butter fat in milk by feeding certain feeds high in fat content. However, experiments have proved that it is impossible to do so to any great extent or for a very long time. Certain oils added to the grain ration have resulted in a temporary increase, but the per cent of fat soon drops back to normal, even though the feeding is continued.

Whether First or Last Drawn Milk: The last milk is much richer than the fore milk. A trial showed the fore milk from a Jersey heifer to test 2 per cent fat while the strippings tested

Fig. 7. Figgis 28th of Hood Farm, owned by Iowa State College. In one year this Jersey cow produced 12,131 pounds of milk and 675.2 pounds of butter fat.

over 15 per cent. This shows the importance of proper milking and manipulating the udder.

Grooming: The stimulation of the circulation by proper grooming has been found to cause a slight increase in the per cent of fat in the milk.

REARING THE CALVES.

To successfully rear calves a great deal of care and attention must be given them during the first six months. But this care is well warranted and is highly paid for by the greater number of calves saved from the ravages of scours and other diseases and the better quality of mature animals that they make later in life.

To guard against navel infection, which so frequently causes the death of calves, the following method has proved to be very efficient:

1. Draw liquid from navel cord as soon as calf is born.
2. Apply tincture of iodine liberally to cord, both internally and externally.
3. Dust compound alum powder on the cord every few hours for one day.

The question of whether the young calf should be left with the cow for a few days or whether it should be taken away immediately is one upon which practical dairymen are not agreed. In most cases it is the practice at the college dairy farm to leave the calf and cow together for two or three days so that the calf may secure the first milk, or colostrum, at the normal temperature, which is quite essential in starting the digestive system properly. Then, too, the calf assists in relieving the inflammation in the cow's udder at this time.

During the first three weeks of the calf's life after being taken from the dam, it should be fed from 2 to 3 1-2 pounds of whole milk three times a day. Care should be taken to feed this milk immediately after being drawn, before it becomes cool. When the calf is three weeks of age it may be fed twice a day and skim milk can gradually and slowly be substituted for a like amount of whole milk. Three more weeks should be used in getting the calf onto a whole ration of skim milk. When it reaches the age of six weeks it should be receiving from 12 to 16 pounds of warm milk per day. Great care should be taken not to over-feed the calf with milk, as more calves are injured by over-feeding than by under-feeding. At the college farm best results are secured by 16 pounds per day if fed when on full feed. It is usually advisable to continue the skim milk feeding until the calf is about eight months of age.

GRAIN RATIONS FOR CALVES.

A grain ration of equal parts corn, oats and bran, with a small quantity of oil meal, should be provided for the calf. Even when but a few weeks old it will begin to eat the grain, and nibble at the hay. It is best to feed cracked corn at first and then later substitute shelled corn. Whole oats are better than ground oats for the young calf. Clover hay, or mixed clover and alfalfa, is superior

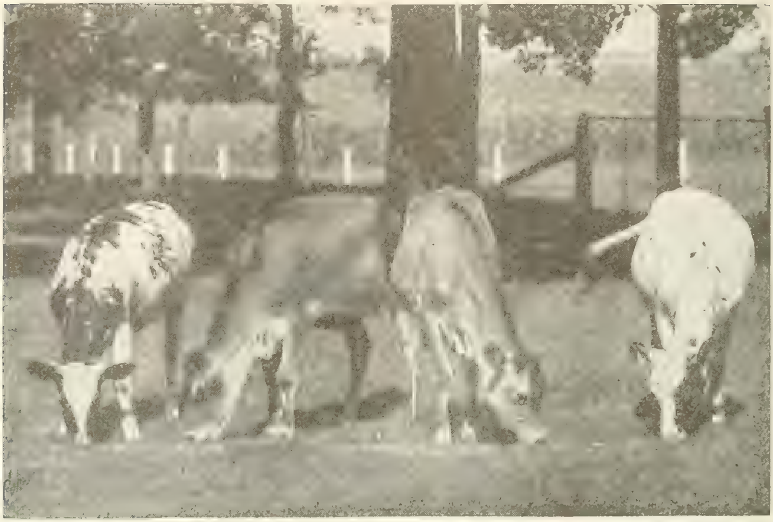

Fig. 8. Ayrshire and Jersey heifers, five months of age, at Iowa State College.

to alfalfa alone for the young calf, as alfalfa alone is too rich for the kidneys and digestive tract.

Calves dropped in the fall and early winter will do well on pasture the first summer if provided with some grain and shade, while calves dropped in the spring or early summer are much better off when properly cared for in the barn during the first summer.

SCOURS IN CALVES.

Thousands of calves are lost each year, due to what is known as scours. On every farm measures should be taken to guard against this disease, which results from a deranged digestive system. The calves should have warm, clean, light and well ventilated pens. The milk must be fed in regular amounts, at regular times, at a temperature of about 80 degrees F., from scrupulously clean pails. The foam which accumulates on the milk while it is being separated should never be fed. The time to feed the grain ration is immediately after the milk is fed, so that the calves will not suck each other's ears and thus take air into the stomach, which causes bloat and produces scours. It is well to have stanchions on one side of the pen so that the calves may be confined for a short time after being fed milk.

Each day during the winter, when the weather is favorable, the calves need to be turned out into a sheltered yard for exercise, which is necessary for their proper growth and health. It is also very important that the calves, from a very early age, be given all the pure, fresh water they care to drink each day. The pens should be disinfected frequently. Quick lime is excellent to sprinkle on the floor each time it is cleaned and a frequent spraying with some standard coal tar dip solution will prove beneficial.

SUBSTITUTES FOR MILK.

There are several calf meals on the market which seem to give very good results, especially when fed in addition to a small quantity of milk. There are many home made mixtures which are fairly efficient and the following statement concerning "hay-tea" from Henry's Feeds and Feeding may be of interest:

"Stewart gives the following satisfactory experience with a hay-tea ration for calves: 'If the hay is cut early when it has most soluble matter, and is good quality, the tea will grow good calves, but this extract frequently has too small a proportion of albuminous and fatty matter. Yet, if the hay-tea is boiled down so as not to contain too much water for the dry substance, calves will usually thrive upon it. We tried an experiment by feeding 2 gallons of hay-tea, in which one-fourth of a pound of flax seed and one-fourth of a pound of wheat middlings had been boiled, to each five calves thirty days old. This experiment was continued sixty days, with a gradual increase, during the last thirty days, of the middlings 1 lb. per day. These calves did well, gaining on an average over 2 lbs. per head per day'."

FEED AND CARE REQUIRED BY DAIRY HEIFERS.

In rearing a dairy heifer from birth to freshening, the chief purpose is to grow a large, strong framework and body and that should ever be uppermost in the dairyman's mind. Every care possible should be given to stimulate the growth of bone and muscle. If a fall calf, of course, it is kept in a warm barn and well fed with skim milk, clover or alfalfa, corn, oats, bran and oil meal until late spring, when it may be turned on good pasture. But the feeding of the same grain should be continued all through the summer in a more limited way, increasing the oats and corn at the expense of the bran and oil meal. In the heat of the summer the young animal needs shelter from the heat and flies in the same manner as the cows. When cold weather first comes, give the heifer the run of a shed, always providing her with an abundance of clover or alfalfa hay, corn stover, and a limited amount of silage to keep her growing. Feed largely of these coarse feeds to develop a large, well distended digestive apparatus. In the past it has been advocated that if the heifer becomes fat she will be worthless as a dairy cow. However, if fed proper foods, such as we have mentioned, and if a good growth and large, well distended barrel have been developed, many fat heifers, when they come into milk, make excellent dairy cows. But to feed the heifer fattening foods only is apt to ruin her for the dairy when she matures.

RATIONS FOR DAIRY HEIFER.

The following are excellent rations for yearling dairy heifers during the winter months:

1. Silage	20 lbs.	2. Clover or alfalfa hay	15 lbs.
Clover or alfalfa hay	8 "	Grain	1 "
Grain	2 "	Roots	20 "

3. Clover or alfalfa hay	15 lbs.
Grain	3 "

Give the heifers good, comfortable quarters, preferably a shed open to the south, clover hay, corn silage or roots, a little corn, bran and ground oats, with some corn fodder and straw once in a while for a change. Silage or roots will take the place of succulent pasture grass and will tend to keep them in good health.

WHEN TO BREED.

The proper time to breed the heifer will depend upon the breed as well as the growth and development of the individual. Early maturing animals of the Jersey and Guernsey breed should ordinarily be bred to freshen at 25 or 26 months of age, while Holsteins, Ayrshires and Brown Swiss heifers should freshen at about 28 months of age. Heifers that are large and heavy fleshed should be bred younger than smaller heifers of the same breed. It costs from $50.00 to $60.00 to grow a dairy heifer up to producing age.

FEED AND CARE OF THE DAIRY BULL.

It is important that the herd bull be kept by himself or with other bulls rather than allowed to run with the herd of cows. It is essential that the dairy bull receive exercise. This may be provided by having a pasture or paddock opening from his shed or stall so that he may go in and out at will, or by turning him out into a special pasture each day. Many dairymen keep the bull exercised by placing him in a tread mill each day, the power being utilized in some cases to run cream separators, washing machines, grind stones, etc. The dairy bull, being a very nervous animal, should never be abused or teased, that may make him mean.

Dairy farmers are practically unanimous in the opinion that a too liberal ration of silage is not good for the herd bull. When so fed the animal is usually rather heavy middled, sluggish and slow in breeding. The large amount of silage distends the middle unduly and does not supply the balance of nutrients necessary to keep the animal vigorous and active in service. In addition to a small quantity of corn silage, alfalfa or clover hay should be fed and a grain ration of corn, oats, bran and a little oil meal.

HERD RECORDS.

"Know your cows" is a stepping stone to success in the dairy business. The only accurate method of determining the relative merits of the cows in the herd and thus make it possible to weed out the cows that do not return a profit, is to make use of the milk scale, the Babcock fat test and the feed record throughout the whole lactation period. The following records should be kept and will prove of great value to the dairyman: Production of milk, production of butter fat, feed records and breeding records.

The production records may be kept by all and require but very little time and effort. Blank milk sheets may be secured from the publishers of any dairy paper and it requires about a minute per day to weigh and record the weight of milk at each milking. To determine the production of butter fat, a careful composite sample of each cow's milk for each milking for two days should be taken about the middle of each month. Most of the buttermakers will gladly test these samples.

Good feed records are kept in such a manner that one can estimate quite closely the cost of production, which will vary.

The breeding records are absolutely necessary in the case of the pure bred herd and will prove of great value to the man with a grade herd. Every farmer will find that it pays to record service and calving dates so that the cows may receive the proper care when it is needed.

ESSENTIALS IN DAIRY BUILDINGS.

First class dairy cows are relatively thin in flesh, especially during periods of lactation. For this reason they are more susceptible to cold than are beef cattle or any class of meat producing animals. Thus, from a humane standpoint, dairy cows should have warm, dry quarters during cold weather. From the standpoint of profit, good shelter is essential. Food supplied the dairy cow is for the purpose of milk production. The greater amount of food converted into milk, the greater the dairyman's profit. If the cow is compelled to withstand the cold she must necessarily convert a portion of her food into heat with which to warm her body, hence a low milk flow and stunted profits for her owner. All first class dairymen realize this point and consequently all good dairy farms are well provided with good barns, for the cows in milk, at least.

ARRANGEMENT OF BUILDINGS.

In arranging all buildings on the dairy farm the following points are deserving of careful consideration:

a. Location.
b. Convenience.
c. Light.
d. Heat.
e. Ventilation.
f. Sanitary conditions.
g. Confinement of odors.
h. Appearance.

From the standpoint of convenience, it would be advisable to have all buildings located close together, but because of the danger of fire on any farm without adequate fire protection this is not desirable. Neither is it advisable to build extremely large barns. On dairy farms where from five hundred to a thousand cows are kept in milk, it has invariably been found more satisfactory to stable only about fifty or sixty cows in one small stable and build a sufficient number of barns to shelter the entire herd.

LOCATION.

Dairy barns should be built on a spot that is high, well drained, and sheltered from the cold northwest winds of winter. At best the lots and paddocks surrounding barns get very muddy and foul in spring time, but when the barn sets on a high, well drained spot the lots soon become dry after the frost leaves the ground.

TYPES OF BARNS.

The following types of barns are used on dairy farms: Basement, round, one-story, and two-story barns, and the covered barn yard or double stabling system. Basement barns are difficult to light and ventilate and should seldom, if ever, be used for housing dairy cows. Too much care in lighting and ventilating the dairy barn cannot be taken. These factors need more attention for dairy animals than for any other class of animals because the cows are confined most of the time for a large portion of the year. If housed in a damp, ill-lighted and ill-ventilated barn, the dairy cow is very likely to become diseased.

Round barns are fairly economical so far as building material is concerned. However, they are nearly always dark and the usual barn odors in them are not confined. Therefore, they are generally not desirable for dairy cattle.

One story barns may easily be made practically ideal, from the standpoint of light and ventilation, but are rather expensive from the standpoint of storage. The one story barn with a monitor roof, while excellent in summer and in warm climates, is cold, hard to ventilate and impractical on the Iowa farm.

Two story barns, if tightly ceiled and provided with proper window space and ventilation, are very practical on the Iowa farm where the storage room is needed.

The covered barnyard or double stabling system decreases the amount of labor required. It must have great quantities of bedding and, if adopted, the cows must be in small lots and dehorned.

CONVENIENCE.

At best a great deal of labor is involved where many cows are milked, but if care and judgment be exercised in locating and building much can be gained by way of convenience in eliminating the work.

It should be the rule in building for cows to face them outward. Impractical dairymen nearly always make the mistake of facing the cows toward each other, and in defense of their faddish idea state that the cows look better and that feeding operations are lessened. But this is a mistake. The experienced dairyman will say that the cows look better facing outward because he first looks at the milking end of the animal.

In barns where cows face inward the herd must be divided whenever driven into the barn, half of them entering a door on one side and the remainder on the other side. Even though the alleyways back of the cows are quite wide, the walls of the barn become splashed and besmeared with manure and the tidy dairyman who prides himself on cleanliness must spend hours keeping these walls scrubbed. Two alleyways become dirty each day and must be scrubbed and it is a great task to clean the manure from two sides of the barn and carry bedding all around the barn to be placed in the stalls. The task of conveying the milk to the milk room is doubled, also, because there can be no one convenient central point to weigh the milk.

When the cows face outward all enter one large door and seek their stalls; a litter carrier running between the rows of stalls will convey all manure directly from the barn. It is impossible for cows to splash walls with manure. There is only one alleyway to be scrubbed and all waste may be quickly swept up. The personal experience gained by the writer on dairy farms where each type of barn was in use convinces him that to keep the barn in a clean, sanitary condition requires twice as much work when the cows face in than when they face out.

The best location for the feed room is at the head of one feeding alleyway with a silo adjoining or at the other end of the same alleyway, and a hay chute at the end of the other alleyway. Then with the feed or silage wagon the feeder can quickly and easily feed around the cows, finishing at the starting point.

For convenience a track on which a litter carrier will run should pass by all stalls so they can be quickly and easily cleaned.

FEEDING METHODS.

In view of the fact that each cow should be fed individually and all grain weighed to her, the task of feeding is a large one and one of three ways may be used:

1. A row of covered boxes large enough to hold a week's feed may be built along the wall in front of the cows and the feed weighed up once a week; then the feeder can pass along and give each cow her feed with a small scoop.
2. A feeding wagon may be divided into apartments, each containing a different food, and the wagon fitted up with a spring balance scale. Thus the ration can be weighed and mixed as fed.
3. In the feed room each cow may have a box just large enough for one day's ration. Each day the feed can be weighed and placed therein. The rack containing these boxes should be mounted on rollers so that they may be rolled along in front of the cows. This method facilitates individual feeding and is quite convenient.

Watering cows in winter entails a great deal of labor if cows are to be watered twice daily, as they should be. Many devices have been patented and placed on the market for installing in cow barns. The most common is the individual basin for each cow in which water is always present. Another system, where cement mangers are used, is a hydrant at one end and a drain that can be plugged at the other. After feeding the manger is swept out and the water turned in so the cows can drink. Then the water is drained out, so that at each watering time the cows receive good, clean, fresh water. When the cows are watered in an outside tank and they should get out for a short time each day—a tank heater should be provided.

WARMTH, LIGHT AND VENTILATION.

Warmth, sunshine, light and ventilation go hand in hand and all are of exceptional importance. The value of warmth has been referred to and in this connection it may be said that a barn well built and without cracks, in a sheltered spot, will, as a rule, be warm enough when filled with cows, the body heat given off.

Sunshine, light and ventilation, however, are not so easily attained. Barns built to run north and south are most desirable as they admit the most light and sunshine. Another advantage gained by building the barn on a line running north and south is that on warm days the doors at each end may be opened and the air of the barn quickly changed. In summer time this guarantees a cool barn. Windows should be large and placed close together, admitting all possible light and sunshine. Light and sunshine are death to germs.

As for ventilation, perhaps the King system, properly installed, is best. This system is simple and consists of fresh air intakes at the ceiling of the barn and foul air outlets at the floor. The outlets extend from the floor to the cupola of the barn and should be lined with tarred felt or paper to make them air tight. The principle on which the King system operates is that foul air is heavier by 15 per cent than fresh air and settles to the floor and is conveyed from the barn through the outlets on a level with the floor as the fresh air enters the intake flues. Another plan which promises to be successful is to use the same outlets for foul air and insert muslin instead of glass in a number of the windows. Still another plan which seems to be very efficient is to have intakes in the side of the barn or windows and have the outlet shaft reach nearly to the floor, the lower part being either of canvas or so constructed as to telescope and thus raise or lower.

SANITARY CONDITIONS.

Because in the dairy barn feed for human consumption is being produced and because milk readily takes up impurities, it is very important that sanitary conditions and methods prevail in and about the barn. The public is beginning to realize that there is a great difference between pure and impure milk, and many cities are fighting persistently against the sale of impure milk.

Considering these facts it becomes at once apparent that it is to the dairyman's advantage to produce a pure, wholesome commodity, and to do this his barns, cows and attendants must be clean. All floors, feed mangers and gutters should be of cement and kept scrupulously clean. Gutters, furnished with drains for conducting liquid manure to a cess pool, should be built behind the cows. The cows themselves need daily grooming and udders, teats and flanks should be sponged off before each milking. Milkers and every one who handles milk must be clean. White laundried suits worn while milking and caring for the milk will be a great source of cleanliness. The milk room should at least be separated from the barn by a corridor to prevent odors from entering it. It should have cement floor and walls that can be easily kept clean by washing. Plastered walls are unsatisfactory as steam and moisture and jar of machinery cause plaster to crack and fall. Whitewashing the interior of the barn at frequent intervals serves not only to make the barn lighter but also destroys many germs. It may be said in this connection that the fewer and simpler the furnishings and equipment in the barn the easier it is to keep clean. For this reason gas pipe partitions in stalls and swinging iron stanchions hung in gas pipe frames are much superior to complicated patent stalls; and, too, they are more comfortable for the cow and keep her cleaner, points well worth considering. The same sanitary conditions are worth observing in the calf pens because dirty surroundings are directly accountable for many of the troubles experienced from calf scours.

CONFINEMENT OF ODORS.

About the dairy barn there are many distinct odors and these must be confined to themselves to prevent the milk from becoming contaminated. Silos have an odor peculiar to themselves and should be built away from the barn and connected with it by a corridor, the door of which can be kept tightly closed. With this precaution, and by feeding silage only after milking, the milk will not be tainted nor taste of the silage flavor. The calf barn has still another peculiar odor and for this reason should be set off from the cow barn. Hay, though without any bad odor, is dusty. The hay chute, therefore, should be a closed apartment and large enough to permit a large amount of hay to be thrown down from the mow at once. After the dust has settled the door may be opened and the hay distributed among the cows. This keeps much dirt out of the barn. The feed room, too, should be a tightly closed room for the same reason.

The cow barn itself has odors not agreeable when found in milk, so the milk room needs to be a distance from the barn. Many milk plants have their milk rooms many yards from the barn and carry the milk in cans over a cable. At least five feet of space should separate the milk room from the barn; this too may be connected with a corridor fitted with swinging doors,—two sets preferably.

Bulls also have a distinct odor, and more than this, they are very troublesome when housed in the same barn as the cows. For these reasons it is advisable to have a separate place for them a goodly distance away. A shed opening into a small pasture of an acre and a half per bull is best. He can go in and lie in the shed out of the hot sun or cold winds and storms or he can remain in the pasture. Unless the weather is very severe he will choose the latter, which is best.

To make a cheap addition to the capacity of the dairy farm it is well to have a shed for dry cows, yearlings, heifers, etc., when not in milk. These animals will otherwise take up expensive room in the cow barn proper when they would be better off in the open air, sheltered from exposure by a cheap, warm shed where they will not detract from the appearance of the milking herd. This shed is best located so that it will be conveniently accessible from the silos, hay room and feed room of the main barn, as the cattle there kept can be well fed with little labor.

THE KIND OF FLOOR.

The features of a good floor for the dairy barn are:

1. Impervious to moisture.
2. Sanitary and easily cleaned.
3. Comfortable for cows.
4. First cost not too great.
5. Durable.

The following floors are in common use in dairy barns:

1. Dirt with cement or wood gutter.
2. Wood.
3. Brick.

4. Cement.
5. Cork Brick.
6. Creosote Blocks.
7. Planks dipped in creosote.

The dirt floor with cement or wood gutter is cheap and comfortable; however, it takes up moisture and is not very easily cleaned. It is superior to the wood floor in nearly every respect, especially if made with clay that will pack firmly. Brick floors are not very desirable and as they are rather expensive are used but little at the present time. Cement is the material which comes nearest the requirements for the dairy barn. It is impervious to moisture, sanitary and easily cleaned, the cost is not great and if properly constructed it is very durable. However, it should not be too smooth or the cows are likely to slip and be injured. Furthermore, the cement floor is hard and unyielding and unless a generous supply of bedding is used during the cold weather, udder troubles may occur from contact with the cold cement. These objections may be readily overcome by putting cork brick or creosote blocks on top of the cement in the cow stalls. Either will be found to be very efficient and valuable, but it is impossible to make definite statements concerning their relative durability as they have not been in use long enough.

Planks dipped in creosote are quite an improvement over the undipped planks but not equal to the cement with the cork brick or creosote block in the cow stalls. It is a good idea to have the cement wall extend up to the bottom of the windows, care being taken not to leave a corner or crack for the accumulation of dirt at the junction of the floor and wall.

ARRANGEMENT OF LOTS AND PASTURES.

On the dairy farm are old bulls, bull calves, cows in calf, open cows, heifers in calf and those not, and heifer calves. Pastures and grass lots should be provided for each of these classes of animals. No worse mistake can be made than to permit cows heavy with calf and cows that are liable to come in heat to run together. Those in calf are liable to be caused to abort and much loss is thus occasioned. Cows in heat should be at once removed to a separate small pasture until this period is over, for even after considering abortion, such animals may cause cows milking heavily to fret and fall away greatly in their milk flow. Young heifers and heifer calves do best when kept separate and to themselves, for dairy animals come in heat very young and if running with older animals they are likely to be broken down and ruined at such times. Because of this hot-blooded characteristic, heifer and bull calves should be kept separate after they are three months of age. Many instances are on record where dairy bred heifers have become accidentally impregnated and practically ruined when only three months of age. Lots and small pastures are very convenient and it is doubtful whether it is possible to have too many of them on the dairy farm.

What might be termed a night pasture is provided by many dairymen to accommodate the milking herd during the night, close to the barn, so that in the early morning the cows can be quickly got in and milked without wading through wet grass.

DISEASES COMMON TO THE DAIRY HERD.

It should be stated in this connection that the services of a competent veterinarian are occasionally absolutely necessary and this veterinarian must be on the ground to know all the conditions and to diagnose and treat the case for best results. However, the following treatments have been found very efficient and should be known by all who work with dairy cattle.

SCOURS OR WHITE SCOURS.

A treatment which was first used and recommended by Dr. L. A. Klein of the South Carolina experiment station, and which is efficient both for ordinary and white scours, is as follows: One part formalin to 4,000 parts milk. This dilution may be obtained by making a stock solution of one-half ounce of formalin to fifteen and one-half ounces of water. From this stock solution one teaspoonful is added to each pint to be fed the affected calf.

A mixture of equal parts salol and bizmuth sub-nitrate may be given in connection with and preceding the formalin treatment. A dose of this powder would be about one-fourth of a teaspoonful and should be placed well back on the calf's tongue just prior to giving the milk. This treatment may be repeated on the second day if necessary.

Another treatment in case the scours are due, solely to indigestion is to reduce the feed and give the calf from one and one-half to two tablespoonfuls of castor oil, repeating the dose on the second day if necessary. Scours in very young calves may be due to the fact that the mother's milk is too rich in butter fat and a change is necessary.

ABORTION. (Slinking the Calf.)

Abortion is the term used for the expulsion of the unborn calf at any time before the completion of the full period of pregnancy. It usually occurs at those three week intervals at which a cow would be in heat if not pregnant. In cows abortion may be either contagious or non-contagious. In case one is not sure, a blood test may be made to determine whether or not contagious abortion is in the herd. Information concerning this test may be secured from a competent veterinarian or by writing to the Veterinary division, Iowa State College, Ames, Iowa.

Non-Contagious Abortion: Poor condition, weakness, and a too watery state of blood may be a predisposing cause. This may result from poor or scanty feed, excessive drain on the udder while bearing the calf or from feed deficient in certain elements. Sloping, slippery stalls, deep gutters, crowding at feed rack, gate or tank, excitement, offensive odors and irritant poisons are among the causes. Of the last, ergot is one of the most active and common.

Contagious Abortion: Contagious abortion spreads very rapidly in a herd and unless extraordinary care is exercised it is very hard to get rid of. It is due to the presence of a germ which may be easily transmitted from one animal to another.

DIRECTIONS FOR THE TREATMENT OF AN ABORTING HERD.

1. Burn the aborted foetus and membranes. This material carries the germs of abortion in abundance and burning or deep burial furnishes the only means of getting rid of it in a safe way.

2. Isolate discharging cows. The vaginal discharge from cows that have aborted is very virulent and may furnish the means of infecting other cows. Hence, discharging cows should be kept apart from the herd.

3. Disinfect the premises. This procedure should be executed with the most exacting care. Partial or inefficient disinfection is practically useless. To disinfect, where fumigation with the vapor of formaldehyde cannot be employed, the spray pump furnishes the best means. It should be borne in mind that disinfectants do not destroy germs that they do not come in contact with. So all large accumulations of bedding, forage and manure should be removed and every place that may harbor a germ should be reached with the disinfectant. Especial care should be used to drive it into every crack, knothole, behind every loose board, on top of every beam and into every partly concealed hole as well as upon every exposed surface. A five per cent solution of good (not crude) carbolic acid may be used for this purpose.

Following the disinfection by spraying and the cleaning of the stable, it may be whitewashed with limewater containing one pound of fresh chloride of lime to each three gallons of water. This may be applied with a brush, or, better still, with a spray pump.

The barn yard should be well cleaned out, the manure being spread in some field that the cattle do not have access to.

4. Irrigate the genital passages of the cows that have aborted. This may be done by means of a funnel and a rubber hose five-eights of an inch in diameter and about four or five feet long. Insert the hose into the vagina and, if possible, into the uterus of the cow. Allow from three to four quarts of the warm solution to flow into the cow and out. Take a fresh hose and irrigate the next cow, allowing the first hose to soak in an antiseptic solution in the meantime.

This treatment should be repeated every second or third day so long as there is any discharge from the cow. Afterwards it may be used once or twice a week.

There are many solutions recommended for this purpose. A very safe and efficient one being a one per cent solution of permanganate of potash. This solution may be made by using one tablespoonful of the crystals to three gallons of luke warm water.

5. Irrigate the sheath of the bull. The purpose of flushing out and disinfecting the sheath and the outside of the penis of the bull, is to prevent him from carrying the germ of abortion from one cow to another. This procedure should be enforced before and after each service. This is very important. The sheath may be flushed out by using a small rubber hose and funnel, or by the use of a small syringe. The end of the hose is to be inserted

into the sheath beside the penis, the foreskin is held together with the fingers and the antiseptic is poured into the funnel.

6. The long hair at the end of the bull's sheath should be cut off. Moreover it is well to clip the hair from under the belly over a circle one foot in diameter surrounding this opening of the sheath. Then, by washing with a sponge, this area can be easily cleaned before each service.

7. Wash off the external genitals of each cow every day. For this purpose use any of the antiseptics recommended above. They can be applied with a clean sponge. The parts washed should comprise the root of the tail, the anus, the vulva and the surrounding skin for a distance of several inches, and the corresponding portions of the tail. A separate bucket and sponge should be used for the cows that are pregnant and those that have recently aborted.

8. Do not breed a cow for about ten weeks after she has aborted. About ten weeks are required for the thorough treatment of a cow that has aborted and she should not be bred before the expiration of this period. If she shows any discharge or other indication of vaginal catarrh, she should not be bred for a longer period, or until the parts are in entirely normal condition. The last injection two days prior to service should be a two per cent solution of bicarbonate of soda.

9. A solution of carbolic acid may be administered subcutaneously to each pregnant cow. For this purpose use a three per cent solution of carbolic acid, and of this inject two drams every ten days. Should this cause swelling in some individuals, for these use a smaller amount. This treatment is highly recommended.

Salt Mixture. A mixture made up as follows is highly recommended by a number of the leading dairy farmers and may be used in connection with treatment number 9; ten pounds of sulphur, six pounds copperas, three pounds saltpetre, three pounds air slacked lime, one pound asofetida.

One pound of the above mixture is mixed with each ten pounds of salt and place where the animals can eat what they desire.

The herd on the college dairy farm was handled in the manner outlined above upon the outbreak of contagious abortion a few years ago and the trouble soon ceased. The above treatment, except the use of the salt mixture, was recommended by members of the Veterinary Department of Iowa State College.

METHYLENE BLUE TREATMENT.

In bulletin No. 174 from the Vermont Experiment Station Dr. F. A. Rich reports that by beginning early in pregnancy the use of methylene blue, infectious abortion may be stopped. He states that, "10 to 15 grains (1-3 to ½ oz.) doses (in capsules) should be given night and morning for seven days, and that after a four weeks' interval the treatment should be repeated for another seven days and continued at four week intervals during the period of gestation." It may be administered by introducing the capsules into the throat by means of a balling gun. It is important that medicinal rather than commercial methylene blue be used.

MILK FEVER.

Milk fever is of frequent occurrence and in cows giving large quantities of rich milk much precaution is necessary and very close attention is important the first forty-eight hours after calving.

The feeds used should make the digestive system cool and act as a laxative and the cow should not be placed in a draughty stall or given cold water to drink. The indications of milk fever are as follows: Restlessness, stamping of the feet, throwing the head, wild appearance of the eyes with dilated pupils and bellowing. These symptoms soon give way to muscular weakness. The animal staggers, loses power of standing and falls to the ground. Unless quickly attended the cow throws her head around on one shoulder and soon enters a comatose state. When the first symptoms appear the udder should be filled full of air with a milk fever outfit made for the purpose and all feed should be kept from the cow for a time. Neither should she be drenched while in this condition. Great care should be exercised to properly sterilize the teat tubes, and all that comes in contact with the udder owing to the danger of infection. Full directions accompany each milk fever outfit and one of these outfits should be on every dairy farm.

GARGET.

Garget is of very common occurrence. It may be caused by heavy feeding or the cow catching cold in her udder from lying on cold ground or floor. To remedy the trouble reduce feed, giving only such feeds as bran, oats, and oil meal; give a dose of salts or raw linseed oil, and massage the affected portion of udder with a mixture of equal parts of sweet oil and Goulard's extract. In severe cases applications of antiphlogistine are very effective. Oftentimes it is necessary to open up obstructed teats to prevent loss of a quarter. This should be done by a competent person with a sterilized instrument made for that purpose.

INDIGESTION AND BLOAT.

This occurs very frequently. For the former, feed should be reduced and a pound of salts or a quart of raw linseed oil should be given. In severe cases a veterinarian should be called or infection is likely to follow. For bloat the cow should be given a quart of raw linseed oil followed by a half pint of turpentine.

SORE TEATS.

Sore teats may result from various causes. They are oftentimes caused by wet hand milking, which is a filthy method and should not be allowed by either the owners of cows or the consumers of dairy products. Applications of olive oil or carbolized vaseline will be found very efficient in treating sore teats and in removing small warts. In the case of warts it is sometimes necessary to clip off the ends and apply lunar caustic.

COW POX.

In cow pox little pale red nodules appear on the teats. The milk flow decreases and soon the eruptions form into blisters which become filled with a straw colored pus. The milking should be done gently and the sore teats washed with a solution of half an ounce of hypo-sulphite of soda in a pint of water.

BITTER MILK.

Bitter milk is sometimes produced by nearly all the cows in the herd. In these cases it is usually caused by the feeding of hay containing weeds, or pasturing the cows in a weedy pasture although it may be caused by bacteria coming in contact with the milk after it is drawn. Some cows will produce bitter milk after milking for several months. Such cows should be dried off and if the same trouble appears during the next lactation period, disposed of.

STRINGY MILK.

This condition does not occur very frequently unless the cows drink water from stagnant pools, etc. By giving the cows access to pure water only and by giving each affected cow two drams of bisulphide of soda daily. Dr. Law states that the trouble may be permanently arrested.

BLOODY MILK.

This condition may result from various causes such as bruises, eating irritant plants, diseased or inflamed udder or eating too rich food.

TUBERCULOSIS.

It is needless to say that a tubercular free herd should be maintained. The herd should be tested annually by a competent veterinarian and all reacting animals should be disposed of. It is best to have a quarantine building in which to place suspicious animals for ninety days and then give them a retest as a slight rise in temperature may be due to some other cause.

PART XI.

Annual Report of the Iowa Weather and Crop Service for 1913.

By GEO. M. CHAPPELL, Director.

The data contained in this report have been compiled from the monthly and weekly bulletins issued by the Iowa Weather and Crop Service, in co-operation with the Weather Bureau of the U. S. Department of Agriculture. In this condensed form the matter will be especially valuable and convenient for reference and comparison in future years, and that is the special purpose of this compilation.

Reports have been received regularly each month from 116 co-operative meteorological stations and from the U. S. Weather Bureau stations at Des Moines, Davenport, Dubuque, Charles City, Keokuk and Sioux City, Iowa, and Omaha, Nebr.

An effort has been made to secure at least one reliable crop correspondent in each township in the State, but while this has not as yet been attained, there are about 1,400 such correspondents who make reports on the acreage, condition, average yield and average price of staple crops during the season.

The instrumental equipment has been kept up to a high standard, new thermometers, rain gages and instrument shelters being issued to co-operative observers to replace worn out or defective instruments or equipment whenever necessary.

There have been distributed during the year 20,450 copies of the Monthly Reports of the Iowa Weather and Crop Service, and 40,000 copes of the Weekly Weather Crop Bulletins.

The daily weather forecasts were distributed by telegraph at the expense of the U. S. Weather Bureau to 70 towns, by mail to 2,439 addresses, by rural delivery to 1,444 addresses, and by free telephone to 103,156 subscribers.

Special frost warnings were sent during the fruit blooming season to all orchardists in the State, who were prepared to use orchard heaters in case of frost or injurious temperatures.

In addition to the regular monthly crop reports a special report was made each month during the growing season showing the condition and probable output of apples. This report was made in co-operation with the Horticultural Department, Iowa Experiment Station, and will be continued on a larger scale during the season of 1914.

CLIMATOLOGY OF THE YEAR 1913.

The year 1913, as a whole, was the warmest year since 1894, which had the same mean temperature as the year just closed, and with one exception, 1901, the three summer months gave the highest average temperature for a like period on record. The months of June, July, August and the first week of September were excessively hot, and the first week of September broke all former records for high temperatures for that season of the year. The temperature was above the normal every month of the year, except March, May and October, the greatest excess being in November and December. November was the warmest month of that name on record and December almost equalled the record for that month in 1891. The precipitation was less than the normal for the year and for all months except March, April, May and October, when there was a slight excess. The summer months were exceptionally dry in the southern half of the State, and July gave less rainfall than any other month of that name except 1894. The high temperature and the long, severe drought that prevailed during the summer were damaging to the corn, potatoes, pasturage and the water supply, especially in the southern half of the State, where the effects of the drought were the worst since the summer of 1894.

BAROMETER (reduced to sea level). The average pressure of the atmosphere for the year 1913 was 30.04 inches. The highest pressure observed was 30.70 inches, at Keokuk, Lee County, on October 31st; the lowest pressure observed was 28.86 inches, at Charles City, Floyd County, on March 14th. The range for the State was 1.84 inches.

TEMPERATURE.—The mean temperature for the State was 49.7°, or 2.2° higher than the normal. The highest annual mean was 54.1°, at Keokuk, Lee County. The lowest annual mean was 45.6°, at Estherville, Emmet County, Northwood, Worth County, and Sibley, Osceola County. The highest temperature reported was 108°, at several stations on various dates during the summer. The lowest temperature reported was —25°, at Council Bluffs, Pottawattamie County, and at Thurman, Fremont County, on January 8th. The range for the State was 133°.

PRECIPITATION.—The average amount of rainfall and melted snow for the year was 29.95 inches, or 2.70 inches less than the normal, and 1.06 inches more than the averages in 1912. The greatest amount at any station was 45.18 inches, at Corning, Adams County, and the least amount was 20.31 inches, at Sioux City, Woodbury County. The greatest monthly precipitation was 10.25 inches, at Britt, Hancock County, in May. There was no precipitation at Lake Park, Dickinson County, and at Rock Rapids, Lyon County, in December. The greatest amount in any 24 consecutive hours was 5.25 inches, at Grinnell, Poweshiek County, on June 7th.

SNOWFALL.—The average amount of snowfall was 25.4 inches. The greatest amount reported from any station was 49.7 inches at Northwood, Worth County, and the least amount was 10.0 inches, at Britt, Hancock County. The greatest monthly snowfall was 28.0 inches, at Inwood, Lyon County, in April. Measurable precipitation occurred on an average of 86 days. This is 2 more than for 1912.

Wind.—The prevailing direction of the wind was south. The highest velocity reported was 54 miles an hour from the east, at Sioux City, on May 13th, and from the northwest at the same station, on November 7th.

Sunshine and Cloudiness.—The average number of clear days was 182; partly cloudy, 89; cloudy, 94, as against 181 clear days, 91 partly cloudy days and 89 cloudy days in 1912. More than the normal amount of sunshine was experienced.

MONTHLY SUMMARIES

JANUARY.

January was an unusually mild and pleasant month, and favorable for all out-door operations and for live stock. The temperature was above and the precipitation below the normal. There was no bad storms and but little snow. The only cold period of importance was from the 5th to the 14th, inclusive, when the minimum temperature was below zero on several days; the coldest day at most stations being the 12th. From the 15th to the 30th, the temperature was moderate, and scarcely any snow fell after the 7th. A cold wave with temperature below zero passed over the state on the last day of the month. During the prevalence of the lowest temperature, in the first half of the month, the ground was generally well covered with snow, but after the 15th, the surface was mostly bare. So far as can be ascertained no material damage has been caused to fall wheat and rye, or to fruit buds.

Temperature.—The monthly mean temperature for the State, as shown by the records of 115 stations, was 20.9°, or 1.6° higher than the normal for Iowa. By sections the mean temperatures were as follows: Northern, 17.5°, or 1.3° higher than the normal; Central, 21.1°, or 1.9° higher than the normal; Southern, 24.2°, or 1.8° higher than normal. The highest monthly mean was 28.2°, at Keokuk, Lee County; and the lowest monthly mean, 13.8°, at Forest City, Winnebago County. The highest temperature reported was 62°, at Bedford, Taylor County, on the 25th; the lowest temperature reported was —25°, at Council Bluffs, Pottawattamie County, and at Thurman, Fremont County, on the 8th. The average monthly maximum was 53°, and the average monthly minimum was —14°. The greatest daily range was 51°, at Inwood, Lyon County. The average of the greatest daily ranges was 40°.

Precipitation.—The average precipitation for the State, as shown by the records of 121 stations, was 0.77 inch, or 0.28 inch less than the normal. By sections the averages were as follows: Northern, 0.41 inch, or 0.41 inch less than the normal; Central, 0.90 inch, or 0.20 inch less than the normal; Southern, 0.99 inch, or 0.25 inch less than the normal. The greatest amount, 2.05 inches, occurred at Grinnell, Poweshiek County, and the least, 0.04 inch, at LeMars, Plymouth County. The greatest amount in any 24 consecutive hours, 1.08 inches, occurred at Grinnell, Poweshiek County, on the 22d-23d. Measurable precipitation occurred on an average of 5 days.

Snow.—The average snowfall for the State was 7.2 inches. By sections the averages were as follows: Northern, 4.6 inches; Central, 8.6 inches; Southern, 8.3 inches. The greatest amount, 17.5 inches, occurred at Earlham, Madison County.

Sunshine and Cloudiness.—The average number of clear days was 14; partly cloudy, 9; cloudy, 8. The duration of sunshine was above the normal, the percentage of the possible amount being 56 at Charles City; 55 at Davenport; 73 at Des Moines; 48 at Dubuque; 56 at Keokuk; and 66 at Sioux City.

Wind.—Northwest winds prevailed. The highest velocity reported was at the rate of 48 miles an hour from the northwest, at Sioux City, Woodbury County, on the 16th.

FEBRUARY.

Like the three preceding months, February was unusually pleasant, and for a winter month, fairly mild. There were no bad storms, and prior to the 21st but little snow. The weather during the first and second decades was exceptionally pleasant, although the temperature was below zero in nearly all parts of the state on one or more days. The first was the coldest day during that period, but at most stations the lowest temperature for the month was recorded on the 24th. Another cold wave passed over the state on the last day of the month. From the 14th to the 21st the temperature was notably high; the maximum readings for the month being recorded on the 17th, 18th or 19th.

Practically all the precipitation came during the last eight days, and especially on the 21st and 22d, and from the 25th to the 27th. There were, however, light scattered snow flurries on the 4th and 16th, but at many stations the amounts were inappreciable. The snow that fell after the 20th was beneficial to fall sown grains, which were, prior to the 20th, dry and brown.

Temperature.—The monthly mean temperature for the State, as shown by the records of 118 stations, was 20.2°, or 1.0° higher than the normal for Iowa. By sections the mean temperatures were as follows: Northern, 16.9°, or 0.7° higher than the normal; Central, 20.4°, or 0.8° higher than the normal; Southern, 23.3°, or 1.5° higher than the normal. The highest monthly mean was 26.4°, at Centerville, Appanoose County; and the lowest monthly mean, 14.2°, at Rock Rapids, Lyon County. The highest temperature reported was 70°, at Bedford, Taylor County, on the 18th; the lowest temperature reported was —24°, at Nora Springs, Floyd County, on the 24th. The average monthly maximum was 62°, and the average monthly minimum was —12°. The greatest daily range was 49°, at Osage, Mitchell County. The average of the greatest daily ranges was 41°.

Precipitation. The average precipitation for the State, as shown by the records of 125 stations, was 0.82 inch, or 0.24 inch less than the normal. By sections the averages were as follows: Northern, 0.63 inch, or 0.31 inch less than the normal; Central, 0.80 inch, or 0.28 inch less than the normal; Southern, 1.04 inches, or 0.11 inch less than the normal. The greatest amount, 2.39 inches, occurred at Keokuk, Lee County, and the least, 0.07 inch, at Alton, Sioux County. The greatest amount in any

24 consecutive hours, 0.99 inch, occurred at Keokuk, Lee County, on the 21st. Measurable precipitation occurred on an average of 4 days.

Snow.—The average snowfall for the State was 7.3 inches. By sections the averages were as follows: Northern, 6.4 inches; Central, 7.2 inches; Southern, 8.4 inches. The greatest amount, 15.7 inches, occurred at Northwood, Worth County, and the least, 0.5 inch, at Clarinda, Page County.

Sunshine and Cloudiness.—The average number of clear days was 14; partly cloudy, 7; cloudy, 7. The duration of sunshine was longer than the normal, the percentage of the possible amount being 67 at Charles City; 67 at Davenport; 64 at Des Moines; 69 at Dubuque; 53 at Keokuk; and 68 at Sioux City.

Wind.—Northwest winds prevailed. The highest velocity reported was at the rate of 36 miles an hour from the northwest, at Sioux City, Woodbury County, on the 10th.

MARCH.

March was cold, wet and changeable, with frequent high winds, and in many localities destructive wind storms. The most marked characteristics of the month were the low temperatures recorded on the 2d and the wind storms on the evening of the 23d.

The temperature was below zero on the morning of the 2d in all parts of the state, and at nearly all stations it was the lowest reading for the winter, and at many stations the lowest on record for the month of March. The minimum temperatures on that date ranged from —4° at Burlington to —23° at Inwood. The temperature was also below zero in many localities on the 1st, and at a few stations in the northern counties on the 6th. The 18th, 19th and the last three days were moderately warm.

The precipitation was fairly well distributed throughout the month, although the amounts were small until the 13th and mostly in the form of snow, but from the 12th to the 25th precipitation was frequent, and at times, heavy, especially between the 13th and 15th. The last five days of the month were generally clear and moderately warm and the soil dried rapidly.

As a whole, the month was unfavorable for farm operations. The soil was wet and cold and practically no field work was done until the last three or four days, when a little plowing and seeding was accomplished. Fall sown grains, clover, grasses and fruits were, however, in fine condition, with scarcely any indications of winter killing.

Temperature.—The monthly mean temperature for the state, as shown by the records of 115 stations, was 31.9°, or 2.1° lower than the normal for Iowa. By sections the mean temperatures were as follows: Northern, 28.9°, or 2.8° lower than the normal; Central, 32.3°, or 1.9° lower than the normal; Southern, 34.5°, or 2.2° lower than the normal. The highest monthly mean was 37.0°, at Keokuk, Lee County; and the lowest monthly mean, 26.2°, at Forest City, Winnebago County. The highest temperature reported was 78°, at Mount Pleasant, Henry County, on the 30th; the lowest temperature reported was —23°, at Inwood, Lyon County, on the 2d. The average monthly maximum was 65°, and the average monthly minimum was —14°. The greatest daily range was 61°, at Inwood, Lyon County. The average of the greatest daily range was 43°.

PRECIPITATION.—The average precipitation for the state, as shown by the records of 121 stations, was 2.48 inches, or 0.56 inch more than the normal. By sections the averages were as follows: Northern, 2.42 inches, or 0.69 inch more than the normal; Central, 2.58 inches, or 0.60 inch more than the normal; Southern, 2.43 inches, or 0.38 inch more than the normal. The greatest amount, 5.88 inches, occurred at Marshalltown, Marshall County, and the least, 0.74 inch, at Rock Rapids, Lyon County. The greatest amount in any 24 consecutive hours, 2.54 inches, occurred at Nora Springs, Floyd County, on the 13th and 14th. Measurable precipitation occurred on an average of 9 days.

SNOW.—The average snowfall for the State was 5.3 inches. By sections the averages were as follows: Northern, 6.2 inches; Central, 5.2 inches; Southern, 4.5 inches. The greatest amount, 14.5 inches, occurred at Charles City, Floyd County; and the least, a trace, at Cumberland, Cass County, and at Keokuk, Lee County.

SUNSHINE AND CLOUDINESS.—The average number of clear days was 11; partly cloudy, 10; cloudy, 10. The duration of sunshine was below the normal, the percentage of the possible amount being 59 at Charles City; 65 at Davenport; 62 at Des Moines; 51 at Dubuque; 56 at Keokuk; and 55 at Sioux City.

WIND.—Northwest winds prevailed. The highest velocity reported was at the rate of 53 miles an hour from the northwest, at Sioux City, Woodbury County, on the 1st.

REPORT ON THE TORNADO AT OMAHA, NEB., OF MARCH 23, 1913.

By L. A. Welch, Local Forecaster, U. S. Weather Bureau.

The tornado that passed through the city of Omaha, on the evening of Easter Sunday, March 23, 1913, was undoubtedly the most destructive to life and property that ever occurred in the Missouri Valley, and probably one of the most destructive in the history of the country. The storm, attended by the pendant, funnel-shaped cloud, first struck the city at its extreme southwest limit, point northeast across the western and northern portions of the city to Cut Off Lake, which is located near the Missouri River and in the extreme northeast portion of the city. The length of the tornado path, between the points named being about five miles, and its width, in the line of destruction across the city, varied from about one-fifth to one-fourth of a mile. The length of time consumed in the passage of the tornado across the city cannot be exactly ascertained, but it is believed to be about 13 minutes. The funnel cloud passed 40th and Farnum Streets at 5:49 p. m. and 24th and Lake Streets at 5:55 p. m., having traveled slightly more than two miles during that interval. The distribution of the wreckage and debris leaves unmistakable evidence of rotary winds, and the presence of a whirl in the cloud at the points in the path where the greatest violence was shown and the greatest destruction occurred; this was particularly the case at the Sacred Heart

Convent, at 36th and Burt Streets, in Bemis Park, and at 24th and Lake Streets. At other points along the path, in the more open places, the wreckage and debris lay in a general direction coincident with the path, this is from the southwest to the northeast. A terrific grinding, roaring noise that was distinctly heard several blocks distant from the path accompanied the storm.

The total number of persons killed in Omaha was 94; this includes those instantly killed, and those whose deaths resulted from injuries received. The number of persons seriously and slightly injured will run into the hundreds. The greatest number of persons killed in any locality was in the vicinity of 24th and Lake Streets; that section being the most thickly populated, and the houses there being of poorer construction were generally completely demolished. The number of animals killed was 33 horses, four cows and five mules. The number of houses completely demolished was 600, and 1,129 were partially destroyed or badly damaged. The estimated property loss, including homes, furniture, personal property, wiring, poles, street cars, trees, fences, etc., is about three and one-half million dollars.

The following meteorological conditions were noted in connection with the passage of the storm, it being borne in mind that this station for which the data are given, is southeast of, and about one and one-fourth miles distant from the nearest point within the path of the tornado. The barometer which had begun to fall on the 22d, continued to fall steadily during the day up to the moment of the passage of the storm, at which time the lowest pressure was recorded, then the pressure began to increase rapidly with marked fluctuations in its movement upward. At 7 a. m. the pressure was 28.51 inches; at noon, 28.36; at 4 p. m. 28.17 and the lowest pressure, 27.93, was recorded as the tornado passed, and at 7 p. m. it had increased to 28.12. At 7 a. m. the temperature was 40 degrees, and continued rising until 4 p. m. when the minimum for the day, 68 degrees, occurred. The sky was overcast from the early morning with stratocumulus clouds, until the middle of the afternoon when for an hour or so it was only partly obscured. About 4:30 p. m. the sky again became overcast, and grew more and more threatening and ominous in appearance until the terrible storm, aproaching from the southwest, burst upon the city. At 5:10 p. m. distant thunder was heard, and rain began to fall which continued until 7:35 p. m., falling heavily at intervals, small hail mingling with the rain from 5:40 p. m. to 5:50 p. m. The prevailing wind for several hours preceding the storm was from the south, but for a period of 15 minutes before the storm struck it became very changeable, with increasing velocity, and blew from all directions, but the general direction maintained during the passage of the tornado was from the southwest. The extreme velocity of the wind recorded at the station during the storm was 34 miles an hour, occurring at 6:17 p. m.

As a further description of the meteorological elements accompanying the tornado, I include herein the notes of the observations made by Prof. A. E. Schmitt, a member of the faculty of Creighton University, who kindly furnished them for my information, and as the university from which his observations were made is located at 25th and California streets, or within eight blocks of the tornado path it is thought that his observations would add to the value of this report. Professor Schmitt says:

"My attention was first called to the gathering of a storm at 4:30 p. m. when the cirrus sheet, which was spreading across the sky from west to east, obscured the sun. By 5 o'clock two-thirds of the sky were covered by the cirrus, and a few scattered fractocumuli were scudding at a moderate altitude from southwest to northeast. At about 5:10 a light rain began to fall, and after this there was considerable play of lightning among the clouds and an almost constant light rumble of thunder. There were, however, as far as I saw, no passages of lightning between clouds and earth at any time before the tornado passed. At approximately 5:30 the clouds had lifted from the horizon everywhere, except for a very short stretch in the southwest. This last fact, the peculiar color of the clouds—a muddy buff—and the time of day led me to suspect somewhat the approach of a tornado, but as the wind had shown no signs of veering, as I thought it should, and the season was so early for a storm of this character, I abandoned the idea, and returned to my desk. A pelting of light hail at my windows, and the flickering of the electric light brought me out once more. And there was the funnel-shaped cloud coming down the hill southwest of us at about 40th street. I looked at my watch—it was just 5:49. In front the funnel was sharply defined even to the very ground and its circulation, counter-clockwise, upward and extremely violent, was easily discernible. On either side, however, and in the rear, rolling clouds of dust and vapor hid the outlines of the funnel. I timed the forward progress of the funnel cloud after it had passed California street and found it to be approximately 400 feet per 16 seconds. It was just 5:49 when I first saw the cloud at about 40th and Farnum and it was 5:55 when it crossed 24th street. It moved on much more deliberately than I had expected, the lower extremity dragging considerably behind the rest of the cloud. It was rather dark immediately in front of the funnel, but surprisingly light outside the path. The clouds quarter of an hour or so later the pronounced strengthening of the wind, above us hung low, and rushed by at great speed, but showed no gyratory motion. Immediately behind the storm the sky was clear up to the cirrus sheet. Above the funnel the cumulo-nimbus was banked mountain high, much higher than I have ever seen it after the passage of a severe thunderstorm. Before long streamers of mist hung down almost to the ground. At the same time the clouds over Council Bluffs had a similar appearance."

STORMS IN IOWA ON MARCH 23, 1913.

During the evening of Easter Sunday, March 23, 1913, several tornadoes moved from Nebraska across the Missouri River into Iowa. In a preliminary report on the general weather conditions that prevailed in Nebraska during the month of March, the Section Director, U. S. Weather Bureau, Lincoln, Neb., says:

"There was a rather rapid procession of warm and cool periods, due to the movement of energetic cyclones eastward, with the center near this section. On the 23d one of these was central over southeastern Nebraska in the late afternoon, and between 5 and 6 p. m. Several distinct tornadoes formed and moved northeastward across the eastern part of the state. One moved from about four miles south of Douglas, Otoe County, to the Missouri River near Rock Bluff, a distance of about forty miles. In its course it destroyed the small town of Berlin and some forty farm buildings. Another moved from near Papillion, in Sarpy County, northeastward across Douglass County, to the Missouri River just north of Omaha. It passed through Omaha and Ralston and did a large amount of damage. A third moved from a point south of Mead, Saunders County, northeastward to the Missouri River just south of De Soto. It destroyed the small town of Yutan, and a large number of farm buildings. A fourth moved from near Craig, in Burt County, northeastward to the Missouri River, and destroyed several farm houses."

The storm that devastated such a large part of the city of Omaha, a report of which is given in preceding article, crossed the Missouri River just north of Council Bluffs, moving northeastward through Pottawattamie County, and over southeastern Harrison, Shelby, Carroll, Greene, southern Webster, Hamilton, northwestern Hardin, Franklin, Bremer, Fayette, southeastern Winnebago, northeastern Clayton and Allamakee. Another storm which originated near Bellevue, Neb., crossed the river near Lake Manawa, just south of Council Bluffs, and moved northeastward up Mosquito Creek, and west of Harlan, Shelby County. The storm that passed through Berlin, Neb., and Mills County, Iowa, crossed the river south of Pacific Junction and moved northeastward over Mills and Pottawattamie Counties, and east of Harlan, Shelby County. A fourth storm, or the Yutan, Neb., tornado, crossed the river near De Soto on the Nebraska side into Harrison County, Iowa, near California Junction, thence northeastward across the county. Another tornado is reported from Burt County, Neb., which may have crossed the river north of Tekamah, Neb., into Monona County, Iowa, but if so it was too high to have caused much, if any damage. While all of these storms were undoubtedly typical tornadoes in Nebraska, most of the manifestations on this side of the river indicated, over the larger part of these courses, straight line squalls. The storms that passed north of Council Bluffs, over Lake Manawa and through Mills County, did, however, show tornadic characteristics through a part of their course, but it is believed that after passing through Shelby County the funnel clouds did not reach the earth, although the tornado roar was heard up in the clouds all along the storm track to the northeastern part of the state. Not only was the roar heard along the main course of the storms, but it attended many local storms in various parts of the state, indicating a violent disturbance above the earth. The several storms crossed the river within a few moments of each other. The Omaha storm struck the Iowa side about 6 p. m. and the Manawa and Mills County storms about 6:15 p. m., and the disturbance passed off over the Mississippi River about midnight. During those hours, severe, and in many places destructive, wind squalls occurred in all parts of the state except the nothwestern counties. As said before, the storms in Mills, Pottawattamie, Shelby and eastern Harrison Counties were undoubtedly of a true tornadic character, and in those counties the damage done was great. In Pottawattamie County there were 17 people killed at Council Bluffs, 2 at Weston, 2 at Gilliat, and 3 at Neola. In Mills County there were 5 killed near Glenwood, and in Harrison County there were 2 killed at Logan and 2 at Beebetown, making a total of 33 killed, and there were more than 100 injured. The property loss in the state is estimated to be more than one million dollars.

The morning weather map of March 23d showed a well defined area of low barometric pressure over Colorado, moving east or a little north of east. The center of this disturbance crossed the Missouri River, north of Omaha a few minutes after the passage of the tornado. Over Iowa the atmospheric pressure decreased all day, or until after the passage of the storm center, which crossed the Missouri River about 6 p. m. and the Mississippi River about midnight. The temperature was moderately low during the forenoon but rising slowly until about 4 p. m. when it began rising rapidly, attaining a maximum at Des Moines of 66 degrees at 8:30 p. m. Rapid changes in cloudiness were observed from 4:30 p. m. to 8 p. m., accompanied by increasing wind velocity, falling barometer, and rapidly rising temperature. Just preceding the passage eastward of the storm center, severe thunderstorms occurred attended by rain and wind squalls. At many places in the state heavy hail accompanied the rain. Near Weston, Pottawattamie County, some of the hail stones were 3 to 6 inches in circumference.

STORM OF MARCH 23, 1913.

J. M. SHERIER, LOCAL FORECASTER.
U. S. WEATHER BUREAU.

Davenport, Iowa, April 3, 1913.

At 11:30 p. m. of March 23, 1913, this section was visited by the most destructive wind storm of recent years. The barometer, which had been falling steadily during the preceding 36 hours, reached its lowest point, 29.43 inches, reduced to sea level, at midnight of the 23d-24th. The temperature had risen from 34 degrees at 7 a. m. to 66 degrees at about 11 p. m. and the conditions were oppressive during the evening and before 11:25 p. m., notwithstanding the fact that the wind increased after sunset and frequently exceeded a rate of 30 miles per hour after 7:30 p. m. Clouds had covered the sky until nearly 8 p. m., with rain from during night a. m. to 1:25 p. m. and a light thunderstorm from 4:44 p. m. to 7:23 p. m. Party cloudy weather prevailed from 8 p. m. to 9 p. m., after which time it was again generally cloudy. At 10 p. m. heavy stratus clouds were observed coming from the southwest which overspread all except the southern third of the sky by the time the opposite horizon had been reached. In addition to their progressive motion from the southwest, there was a tumultuous movement on the part of the swiftly moving facto-stratus clouds that suggested the wave motion of a large body of water. Until 10:45 p. m. a remarkably even border was maintained along the southern edge of the field of lower clouds, beyond which only occasional fracto-cumulus clouds were seen to go. South of this border, and especially in the vicinity of the moon, the light cirro-stratus clouds had a greenish-yellow color, resembling that of cheese. Shortly after 11:00 p. m., the sky became entirely overcast; but there was at no time any formation that indicated the presence of a vortex, though the pitching motion, already mentioned, was particularly marked between 11:30 p. m. and midnight. At 11:25 p. m., the wind suddenly increased in force, reaching an extreme velocity of 60 miles per hour 5 minutes later and maintaining an average velocity of 48 miles per hour from 11:26 p. m. to 11:31 p. m., after which time the rate of movement decreased. A second furious squall began at 12:05 a. m. of the 24th and lasted until 12:30 a. m., with an extreme velocity of 42 miles per hour at 12:07 a. m. When the wind was highest it appeared to come in a rapid succession of gusts and to have an unusual upward force, causing in houses of ordinary construction a vibration similar to that imparted to a vessel by the motion of its screw. At the time of the highest velocity, the wind was fairly steady from the southwest and was at all times from some point in the quadrant from south to west. All wreckage, so far as observations extend, was carried to the eastward of its original position. Light rain began at 11:10 p. m., and ended after midnight of the 23d-24th. A heavy dash of rain occurred from 11:35 p. m. to 11:42 p. m. and was mixed with hail, ranging in size from about 0.2 inch to 0.4 inch in diameter, from 11:40 to 11:42. On account of the danger of freezing temperature, the tipping bucket had been removed from the self-registering rain gauge and the exact rate of rainfall could not be determined. The total precipitation between 7 p. m. of the 23d and 7 a. m. of the 24th, however, was but 0.12 inch. The first thunder was heard at 11:35 p. m. of the 23d and the last thunder occurred about 1:00 a. m. of the 24th. The lightning was most vivid about 11:45 p. m., but not especially close. Aside from the roar of the wind and the hissing of the rain and hail, no unusual noises were noticed.

On the morning of the 24th it was found that all surfaces upon which the rain had dried contained a light deposit of soil which appeared to be yellow clay and which was unlike the surface soil in this vicinity. In the depressions of the metal roof of the Masonic Temple, a building 5 stories in height, the deposit of mud was so thick that it curled along the edges of the tiny puddles as the water evaporated. Numerous reports of the same muddy rain water had been received from Rock Island and Moline, Ill.

In the western portion of the city, three large iron smoke stacks at the plant of the Corn Products Refining Company were blown down, causing a loss of about $5,000. The Davenport Locomotive Works also lost three smoke stacks and it will cost approximately $3,500 to repair the damage at that factory. Two large smoke stacks were blown down at the wheel and wagon works of Messrs. French & Hecht, a few blocks east of the station, damaging the roof of one of the buildings. The roof of the elevator shaft was also twisted from its position by the wind, without being carried away. The actual property loss at that point was about $5,000, but the factory was forced to close and the loss incident to the suspension of operations will be several times the amount already named. The tin roof of the building occupied by the Peter Lamp Iron Company, in the center of the business district, was torn away, causing a loss of about $1,000. Two large plate-glass windows in the New Putnam building, valued at $400, were demolished; and in various portions of the city smaller windows were blown in, chimneys were thrown down and roofs were damaged to some extent. Farm houses and outbuildings were damaged or destroyed at numerous places throughout the surrounding country; and, in some instances, stock was killed. The total damage in this locality is estimated to be about $30,000. On account of the sheltering bluffs to the southward, no serious loss occurred in the cities of Rock Island and Moline, Ill. Telegraph and telephone wires were prostrated in all directions, however, and it was late in the forenoon of the 24th before communication with outside points could be resumed.

Miss Lulu Ellison was killed near Erie, Ill., a small town about 25 miles northeast of Davenport, when the house in which she was asleep collapsed. Mr. Harry Brown, of Davenport, was struck by flying boards and injured, though not seriously.

APRIL.

With the exception of the five days from the 7th to the 11th, inclusive, when precipitation was almost continuous, April was a pleasant month, and favorable for farm operations. The period of precipitation was remarkable not only for its long duration, which in many localities was unprecedented, but for one of the heaviest snowstorms on record in the west central and northwestern counties on the 9th and 10th. Some snow fell in nearly all parts of the State during the storm, but the amounts were small over the eastern and southern counties. In the area of the heavy snowfall considerable damage was caused to trees, and in Sioux City, where more than 20 inches fell, street car service had to be suspended for 36 hours, and telephone and lighting service were badly demoralized. Some of the snow remained on the ground for four days. Another remarkable feature of the month was the tornado which passed over Douglass Township in Madison County on the evening of the 2d

Notwithstanding the fact that there were many cold nights, the average temperature for the month was 1.7° above the normal. Freezing temperatures occurred in all parts of the State on one or more nights, and were unseasonably low between the 26th and 28th. The 30th was generally the warmest day, when the maximum temperatures were 80° or higher.

There was an average of 0.46 inch more than the normal precipitation and the most of it came from the 7th to the 11th, inclusive, but scattered showers occurred from the 2d to the 4th and from the 18th to the 24th inclusive.

Owing to the wet weather during the first 11 days of the month farm work was delayed, but by the close of the month practically all of the seeding of small grain was finished, early potatoes were planted and much ground was prepared for corn. Grasses and winter wheat and rye were in fine condition, and fruit trees were showing abundance of bloom in southern, and beginning to blossom in northern counties.

Temperature.—The monthly mean temperature for the State, as shown by the records of 113 stations, was 50.2°, or 1.7° higher than the normal for Iowa. By section the mean temperatures were as follows: Northern, 48.2°, or 1.4° higher than the normal; Central 50.6°, or 2.1° higher than the normal; Southern, 51.9°, or 1.6° higher than the normal. The highest monthly mean was 54.4°, at Northboro, Page County; and the lowest monthly mean, 45.4°, at Rock Rapids, Lyon County. The highest temperature reported was 88°, at 5 stations, on the 30th; the lowest temperature reported was 16°, at Washta, Cherokee County, on the 12th. The average monthly maximum was 84°, and the average monthly minimum was 27°. The greatest daily range was 51°, at Elkader, Clayton County. The average of the greatest daily ranges was 40°.

Precipitation.—The average precipitation for the State, as shown by the records of 120 stations, was 3.29 inches, or 0.46 inch greater than the normal. By sections the averages were as follows: Northern, 3.77 inches, or 1.30 inches greater than the normal; Central, 2.91 inches, or 0.04 inch greater than the normal; Southern, 3.20 inches, or 0.66 inch greater than the normal. The greatest amount, 7.43 inches, occurred at Inwood, Lyon County, and the least, 1.12 inches, at Cedar Rapids, Linn County. The greatest amount in any 24 consecutive hours, 3.08 inches, occurred at Sioux City, Woodbury County, on the 9th and 10th. Measurable precipitation occurred on an average of 9 days.

Snow.—The average snowfall for the State was 2.9 inches. By sections the averages were as follows: Northern, 6.0 inches; Central, 2.4 inches; Southern, 0.2 inch. The greatest amount, 25.0 inches, occurred at Inwood, Lyon County; no snowfall occurred in the extreme southern part of the State.

Sunshine and Cloudiness.—The average number of clear days was 15; Partly cloudy, 5; cloudy, 10. The duration of sunshine was above the normal, the percentage of the possible amount being 70 at Charles City; 71 at Davenport; 68 at Des Moines, 64 at Dubuque; 62 at Keokuk; and 64 at Sioux City.

Wind.—South winds prevailed. The highest velocity reported was at the rate of 50 miles an hour from the south, at Sioux City, Woodbury County, on the 30th.

TORNADO IN MADISON COUNTY.

About 6 p. m. of April 2, 1913, a severe, but fortunately not very destructive, tornado passed over a part of Douglass Township in Madison County, Iowa. That the loss of property was small is due only to the fact that the storm path was almost entirely along the timber bordering on North River. Only two farm buildings were in the path of the storm, those of Jerome Griffith and R. F. Bush, the latter residing on the old Carter farm in section three. The tornado formed just after a severe rain and hail storm. The Bush and Griffith homes are situated on a high ridge of land, giving an excellent view to the southwest where the storm formed. The absence of dust, owing to the heavy downpour of rain which previously passed over the township, the clear sunlight and the position of the Griffith and Bush places gave an opportunity to study tornadic phenomena that is seldom afforded. The storm formed between the Chas. Howell farm and the mouth of the Howerton Creek on North River. It swept in a northeasterly direction, the funnel extending from 1000 to 2000 feet skyward, and the small end trailing on the ground. Owing to the clearness of the sky the funnel-shaped cloud was visible for a distance of 10 to 15 miles, and the roar was sufficient to attract the attention of everybody within a few miles of the storm path, and was even heard in Winterset, a distance of six or eight miles. Jerome Griffith and his brother stood in the doorway of their storm cave, and watched the storm approach until it began to tear up trees within 20 rods of their position and then sought shelter in the cave until the disturbance passed over. Mr. Griffith watched the tornado cross over a field of fodder. Describing it, he says: "The shocks of fodder could easily be seen darting up the funnel cloud like pins to a horseshoe magnet. I saw objects leave the crater near the top. Those that fell in front were picked up a second time." The Griffith smoke house was carried away but the work bench which was placed against one side of the smoke house was not moved. Neither were several empty tin cans which were on top of the work bench. The chicken house was blown away and some of the chickens were carried a distance of six miles. The weather boarding was stripped from one side of the house and the porch was torn away, but the balance of the house was not damaged. At the Bush farm the barn was destroyed and every tree in the orchard uprooted. The storm continued for a mile beyond the Griffith farm but struck no more buildings. The width of the storm track was from 10 to 60 rods in width and about five miles in length. That the property loss was not greater was due only to the fact that there were no more buildings in its path and the two sets of buildings struck did not receive the full force of the storm.—*The Madisonian.*

MAY.

May, 1913, is generally considered by the public as having been a cold month, but the records show that the mean temperature was only 0.7° below the normal. The close approximation to the normal is, however, due to the fact that at the beginning and close of the month there were short periods of unusually high temperatures, which nearly balanced the low temperatures during most of the remainder of the month. The 29th was at some stations the warmest day in May on record; the maximum ranging from 90° to 102° over the southern half of the state. The 6th, 10th and 11th were the coldest days of the month, when the minimum readings were near or slightly below the freezing point over the northern half of the State.

Showers were frequent, and in many cases heavy; the average monthly amount being 6.24 inches, or 1.74 inches greater than the normal. Rain fell at some place in the State on every day of the month, and as a result plowing and corn planting were delayed until the 27th. Much corn was, however, planted during the last few days, and about 85 per cent of the crop was in at the close of the month. The frequent and heavy rains were of great benefit to pastures and meadows, and a heavy hay crop is assured. Late in the afternoon of the 14th a small tornado occurred at Council Bluffs, passing over much of the same territory as the Easter tornado did. The damage was slight compared to that of the storm on the evening of March 23d last.

TEMPERATURE.—The monthly mean temperature for the State, as shown by the records of 111 stations, was 59.4°, or 0.7° lower than the normal for Iowa. By sections the mean temperatures were as follows: Northern, 57.0°, or 1.5° lower than the normal; Central, 59.5° or 0.7° lower than the normal; Southern, 61.6°, or just the normal. The highest monthly mean was 63.4°, at Keokuk, Lee County; and the lowest monthly mean, 54.6°, at Rock Rapids, Lyon County. The highest temperature reported was 102°, at Onawa, Monona County, on the 29th; the lowest temperature reported was 30°, at 3 stations, on the 2d, 6th and 10th. The average monthly maximum was 92°, and the average monthly minimum was 35°. The greatest daily range was 45°, at Sigourney, Keokuk County. The average of the greatest daily ranges was 36°.

PRECIPITATION.—The average precipitation for the State as shown by the records of 118 stations, was 6.24 inches, or 1.74 inches greater than the normal. By sections the averages were as follows: Northern, 6.50 inches, or 1.95 inches greater than the normal; Central, 6.59 inches, or 2.12 inches greater than the normal; Southern, 5.63 inches, or 1.16 inches greater than the normal. The greatest amount, 10.25 inches, occurred at Britt, Hancock County, and the least, 3.14 inches, at Lamoni, Decatur County. The greatest amount in any 24 consecutive hours, 3.42 inches, occurred at Thurman, Fremont County, on the 20th. Measurable precipitation occurred on an average of 13 days.

SUNSHINE AND CLOUDINESS.—The average number of clear days was 11; partly cloudy, 8; cloudy, 12. The duration of sunshine was less than the normal, the percentage of the possible amount being 57 at Charles City; 70 at Davenport; 58 at Des Moines, 51 at Dubuque; 59 at Keokuk; and 48 at Sioux City.

WIND.—Southeast winds prevailed. The highest velocity reported was at the rate of 54 miles an hour from the east, at Sioux City, Woodbury County, on the 13th.

JUNE.

June, 1913, was characterized by low temperatures during the first half of the month, and especially during the second week; almost continuously high temperatures during the latter half; a deficiency of rainfall; an excess of sunshine and the small number of damaging wind, hail and electrical storms. Unseasonably cool weather prevailed from the 7th to the 12th, inclusive. The previous low temperature record was equalled at many stations, and at some the temperature was lower than ever before recorded in June. Frost occurred on low ground in many localities on two or three nights, but no serious damage was done, although the upper leaves of corn were frozen and in some places tender garden truck was cut down. After the 12th the temperature was almost continuously above the normal; the highest readings being recorded from the 14th to the 20th, and from the 26th to the close of the month, when the maximum readings were generally above 90°, and up to 100° at several stations on the 29th.

The average rainfall was 3.31 inches or 1.21 inches less than the normal. Except from Pocahontas County westward to Woodbury and Plymouth Counties, there was generally sufficient moisture to keep vegetation growing rapidly, but over the area mentioned the rainfall was very light, with long intervals between showers. From the 20th to the 25th, inclusive, showers were frequent and the ranifall heavy over the southern and east central districts. The showers on the night of the 24th were, in many localities, accompanied by wind squalls, which lodged and tangled small grain badly.

As a whole, however, the month was exceptionally favorable for the agriculturist. Corn probably never made more rapid growth between the last planting and the end of June than it did this year. Many fields were knee to waist high and much of the crop has been laid by in the southern counties by the close of the month. Fall sown grains were ripe and the harvest had begun, in the southern part of the state, with every indication of good yields. Much clover and alfalfa hay had been put up in fine condition. Pasturage continued good, and the general crop conditions were excellent.

TEMPERATURE.—The monthly mean temperature for the state, as shown by the records of 105 stations, was 71.5°, or 2.7° higher than the normal for Iowa. By sections the mean temperatures were as follows: Northern, 70.3°, or 2.9° higher than the normal; Central, 71.7°, or 2.7° higher than the normal; Southern, 72.4°, or 2.4° higher than the normal. The highest monthly mean was 74.8°, at Keokuk, Lee County, and at Onawa, Monona County; and the lowest monthly mean, 68.4°, at Estherville, Emmet County. The highest temperature reported was 102°, at Clinton, Clinton County, on the 29th; the lowest temperature reported was 33°, at Elkader, Clayton County, on the 9th and at Mason City, Cerro Gordo County, on the 10th. The average monthly maximum was 96°, and the average monthly minimum was 39°. The greatest daily range was 47°, at Alton, Sioux County. The average of the greatest daily ranges was 35°.

PRECIPITATION.—The average precipitation for the state, as shown by the records of 114 stations, was 3.31 inches, or 1.21 inches less than the normal. By sections the averages were as follows: Northern, 2.24 inches, or 2.33 inches less than the normal; Central, 3.17 inches, or 1.20 inches less than the normal; Southern, 4.51 inches, or 0.11 inch less than the normal. The greatest amount, 8.95 inches, occurred at Lacona, Warren County, and the least, 0.74 inch, at Alta (near), Buena Vista County. The greatest amount in any 24 consecutive hours, 5.25 inches, occurred at Grinnell, Poweshiek County, on the 7th. Measurable precipitation occurred on an average of 7 days.

SUNSHINE AND CLOUDINESS.—The average number of clear days was 19; partly cloudy, 8; cloudy, 3. The duration of sunshine was much above the normal, the percentage of the possible amount being 84 at Charles City; 79 at Davenport; 81 at Des Moines; 79 at Dubuque; 78 at Keokuk; and 81 at Sioux City.

WIND.—Southwest winds prevailed. The highest velocity reported was at the rate of 49 miles an hour from the east, at Sioux City, Woodbury County on the 15th.

JULY.

With the exception of 1901 and 1894, the month was the warmest July since state-wide observations began in 1890; and it was also the driest since 1894. The average temperature was 76.1°, which is 2.7° above the normal, and 0.3° and 6.3° below the mean monthly temperature of July, 1894 and 1901, respectively.

While the precipitation was deficient, the average total rainfall for the state was almost three times as much as in 1894, when the average was only 0.63 inch. This, together with the fact that during the four months, April to July, inclusive, of this year, there was 6.40 inches more rainfall than was recorded for the same period in 1894, will explain why the present drought has not been as injurious as the one of that year.

The temperature was generally above the normal except from the 10th to the 12th, and 19th to 25th inclusive; the 16th, 29th and 30th, being the warmest days, when the maximum readings were up to or above 100° in the southern and nearly up to that mark in the northern counties. All of the precipitation came in the form of showers, which were extremely local and widely scattered except on the 11th and 23d when they were quite general in character. The counties south and east of Polk suffered the most from the drought, the average rainfall in that section being only about 0.25 inch and several stations within that area recorded only a trace for the entire month. Over the southwest quarter and practically all of the north half of the state, there was sufficient moisture to keep corn in fine condition, but at the close of the month pastures, potatoes and gardens were in need of rain. In the southeastern counties pastures were brown, corn was seriously injured and water for stock was getting scarce. The dry, hot weather was, however, favorable for haying, harvesting and threshing, and the hay and grain crop were secured in good condition.

TEMPERATURE.—The monthly mean temperature for the State, as shown by the records of 105 stations, was 76.1°, or 2.7° higher than the normal for Iowa. By sections the mean temperatures were as follows: Northern, 73.5°, or 1.4° higher than the normal; Central, 76.6°, or 2.9° higher than the normal; Southern 76.1°, or 2.7° higher than the normal. The highest monthly mean was 80.1°, at Northboro, Page County; and the lowest monthly mean, 70.4°, at Northwood, Worth County. The highest temperature reported was 108°, at 3 stations, on the 16th or 29th; the lowest temperature reported was 45°, at Washta, Cherokee County, on the 10th. The average monthly maximum was 101°, and the average monthly minimum was 52°. The greatest daily range was 43°, at Pacific Junction, Mills County. The average of the greatest daily ranges was 35°.

Precipitation.—The average precipitation for the State, as shown by the records of 117 stations, was 1.82 inches, or 2.62 inches less than the normal. By sections the averages were as follows: Northern, 3.09 inches, or 1.19 inches less than the normal; Central, 1.58 inches, or 2.93 inches less than the normal; Southern, 0.79 inch, or 3.75 inches less than the normal. The greatest amount, 6.23 inches, occurred at Lansing, Allamakee County, and the least, a trace, at Fort Madison, Lee county, and Ottumwa, Wapello county. The greatest amount in any 24 consecutive hours, 2.60 inches, occurred at Clarinda, Page County, on the 7th. Measurable precipitation occurred on an average of 5 days.

Sunshine and Cloudiness.—The average number of clear days was 21; partly cloudy, 8; cloudy, 2. The duration of sunshine was much above the normal, the percentage of the possible amount being 86 at Charles City; 87 at Davenport; 88 at Des Moines, 80 at Dubuque; 80 at Keokuk; and 81 at Sioux City.

Wind.—Southwest winds prevailed. The highest velocity reported was at the rate of 44 miles an hour from the northwest, at Sioux City, Woodbury County, on the 4th.

AUGUST.

The month was characterized by an excess of temperature, and deficiency of rainfall, but these features were more pronounced in the southern than in the northern part of the state. While the northern section had an excess of 3.4° in temperature, and a deficiency of 0.61 inch in rainfall, the southern section had an excess of 6.4° in temperature and a deficiency of 2.13 inches in precipitation. And these departures were still more marked in the southwestern counties where it was the warmest August on record, and one of the driest. The heat was almost continuous throughout the month, and on numerous days the maximum temperature readings were near or above 100°. At Northboro, Page County, the maximum temperature was 90° or higher on 29 days of the month, and was 100° or higher on 16 days.

The precipitation all came in local showers which were poorly distributed geographically, and throughout the month. Thurman, in Fremont County, received only 0.08 inch, while Winterest, in Madison County, recorded 7.13 inches, and in Pocahontas, Palo Alto, Clay and Dickinson Counties, the monthly amounts ranged from 5.00 inches to 6.99 inches. Most of the rain came on the night of the 10th-11th, accompanied by heavy thunder and severe wind squalls, which caused much damage to crops. Corn, throughout much of the central district, was blown down and uprooted. The second and only other storm of importance occurred over the northern counties on the night of the 17-18th. This storm was also attended by heavy rain and high winds and did considerable damage to corn within the area covered. Light and widely scattered showers occurred between the 4th and 9th, the 13th and on the 19th and 20th, but dry weather and intense sunshine prevailed during the last decade of the month.

Except in some of the northern counties, all vegetation suffered by the absence of moisture and the long continued high temperatures. At the close of the month, pastures were brown, late potatoes were practically a failure, and corn was daily deteriorating. Wells were failing and small streams were dry in the southern part of the state, and in many localities stock was being fed as in winter. Fruits also suffered. Apples and grapes are small and apples are dropping from the trees. The ground was too dry and hard to permit much if any fall plowing to be done, and if conditions do not improve soon the acreage of fall sown grains will be greatly reduced.

Temperature.—The monthly mean temperature for the state, as shown by the records of 108 stations, was 76.6°, or 4.8° higher than the normal for Iowa. By sections the mean temperatures were as follows: Northern, 73.7°, or 3.4° higher than the normal; Central, 76.5°, or 4.6° higher than the normal; Southern, 79.7°, or 6.4° higher than the normal. The highest monthly mean was 82.5°, at Northboro, Page County; and the lowest monthly mean, 70.6°, at Elma, Howard County. The highest temperature reported was 108°, at Clarinda, Page County, on the 8th and 31st, and at Northboro, Page County, on the 8th; the lowest temperature reported was 40°, at 3 stations, on the 29th. The average monthly maximum was 100°, and the average monthly minimum was 47°. The greatest daily range was 54°, at Thurman, Fremont County. The average of the greatest daily ranges was 40°.

Precipitation.—The average precipitation for the state, as shown by the records of 117 stations, was 2.68 inches, or 1.31 inches less than the normal. By sections the averages were as follows: Northern, 2.91 inches, or 0.61 inch less than the normal; Central, 2.85 inches, or 1.20 inches less than the normal; Southern, 2.27 inches, or 2.13 inches less than the normal. The greatest amount, 7.13 inches, occurred at Winterset, Madison County, and the least, 0.08 inch, at Thurman, Fremont County The greatest amount in any 24 consecutive hours, 3.90 inches, occurred at Winterset, Madison County, on the 18th. Measurable precipitation occurred on an average of 6 days.

Sunshine and Cloudiness.—The average number of clear days was 17; partly cloudy, 10; cloudy, 4. The duration of sunshine was above the normal, the percentage of the possible amount being 80 at Charles City; 68 at Davenport; 79 at Des Moines, 60 at Dubuque, 76 at Keokuk, and 69 at Sioux City.

Wind.—Southeast winds prevailed. The highest velocity reported was at the rate of 51 miles an hour from the west, at Sioux City, Woodbury County, on the 9th.

SEPTEMBER.

September, 1913, will go on record as having the hottest week of any September on record, and with one exception the earliest general killing frost and freezing temperatures. The first seven days of the month were excessively hot; the daily maximum temperatures being 100° or higher every day over the southern and considerably above 90° in the northern counties. After the 7th the temperature was generally below the normal with light frost over the northern counties on the 13th, and a killing frost and freezing temperatures in all parts of the State on the 22d. In 1890 killing frost was quite general over the State on September 13th, the earliest on record since the establishment of the Weather Service.

The first week of the month was also excessively dry, there being only a few light and widely scattered showers, but after the 7th showers were frequent and fairly well distributed so the average monthly amount was only 0.10 inch below the normal.

The hot, dry weather early in the month forced corn to maturity prematurely, but it caused the crop to escape the more serious damage of the killing frost and freezing temperatures on the 22d. The frost was general and freezing temperatures occurred in practically all parts of the State, but the bulk of the corn crop was far enough advanced to escape injury, and the small percentage that did not was damaged but slightly. The rains during the second and third decades of the month revived pasturage, replenished the water supply and put the ground in excellent condition for fall plowing and seeding, and much of that work was done.

Temperature.—The monthly mean temperature for the State, as shown by the records of 109 stations, was 64.5°, or 0.8° higher than the normal for Iowa. By sections the mean temperatures were as follows: Northern, 62.8°, or 0.7° higher than the normal; Central, 64.4°, or 0.8 higher than the normal; Southern, 66.2°, or 0.7° higher than the normal. The highest monthly mean was 67.9°, at Onawa, Monona County; and the lowest monthly mean, 60.6°, at Elma, Howard County. The highest temperature reported was 107°, at Bedford, Taylor County, on the 5th; the lowest temperature reported was 19°, at Rock Rapids, Lyon County, on the 22d. The average monthly maximum was 100°, and the average monthly minimum was 27°. The greatest daily range was 53°, at Bloomfield, Davis County. The average of the greatest daily ranges was 38°.

Precipitation.—The average precipitation for the State, as shown by the records of 117 stations, was 3.31 inches, or 0.10 inch less than the normal. By sections the averages were as follows: Northern, 3.35 inches, or 0.06 inch less than the normal; Central, 3.57 inches, or 0.33 inch greater than the normal; Southern, 3.01 inches, or 0.56 inch less than the normal. The greatest amount, 7.44 inches, occurred at Clarinda, Page County, and the least, 0.45 inch, at Rock Rapids, Lyon County. The greatest amount in any 24 consecutive hours, 3.90 inches, occurred at Clarinda, Page County, on the 10th and 11th. Measurable precipitation occurred on an average of 9 days.

Sunshine and Cloudiness.—The average number of clear days was 15; partly cloudy, 8; cloudy, 7. The duration of sunshine was slightly above the normal, the percentage of the possible amount being 69 at Charles City; 65 at Davenport; 70 at Des Moines; 60 at Dubuque; 62 at Keokuk; and 68 at Sioux City.

WIND.—Southeast winds prevailed. The highest velocity reported was at the rate of 42 miles an hour from the northwest, at Sioux City, Woodbury County, on the 20th.

OCTOBER.

The principal features of the month were the marked contrasts between the two halves of the month, and the unusually cold weather that prevailed on the last two days. The fore part of the month was generally warm and pleasant, although showers were frequent between the 4th and 10th, while the last 15 days were cold and inclement. As a whole the month was colder than usual, and had more than the average precipitation as well as an excess of snowfall. The average temperature, 49.2°, is 2.7° below the normal for the State, and many of the monthly minimum temperatures were lower than ever before recorded in October; the lowest being 2° below zero at Inwood on the 30th.

The average precipitation for the State was 0.68 inch more than the normal, but the departures were generally small except over the south-central counties where the monthly precipitation ranged from four to more than seven inches. The first snow of the season occurred on the 19th, and on several other days thereafter there were falls in some parts of the State; the greatest amounts occurring on the 28th and 29th.

No general storms of importance were reported, but a very severe hail storm of local character occurred in the vicinity of Mount Ayr, Ringgold County, on the 9th. Some of the hail stones were as large as walnuts and many windows were broken.

As a whole, the month was favorable to agricultural interests. The rains were beneficial to grass and fall grains and facilitated plowing. Corn husking began between the 15th and 23d, and by the close of the month much of the crop was in the crib.

TEMPERATURE.—The monthly mean temperature for the state, as shown by the records of 108 stations, was 49.2°, or 2.7° lower than the normal for Iowa. By sections the mean temperatures were as follows: Northern, 47.1°, or 3.0° lower than the normal; Central, 49.4°, or 2.4° lower than the normal; Southern, 51.2°, or 2.6° lower than the normal. The highest monthly mean (full record) was 53.6°, at Ottumwa, Wapello County; and the lowest monthly mean, 43.0°, at Rock Rapids, Lyon County. The highest temperature reported was 89°, at 3 stations, on the 9th and 14th; the lowest temperature reported was —2°, at Inwood, Lyon County, on the 30th. The average monthly maximum was 83°, and the average monthly minimum was 14°. The greatest daily range was 49°, at Alton, Sioux County, and at Inwood, Lyon County. The average of the greatest daily ranges was 38°.

PRECIPITATION.—The average precipitation for the state, as shown by the records of 115 stations, was 3.03 inches, or 0.68 inch greater than the normal. By sections the averages were as follows: Northern, 2.46

inches, or 0.19 inch greater than the normal; Central, 3.00 inches, or 0.56 inch greater than the normal; Southern, 3.63 inches, or 1.28 inches greater than the normal. The greatest amount, 7.29 inches, occurred at Corydon, Wayne County, and the least, 0.35 inch, at Alton, Sioux County. The greatest amount in any 24 consecutive hours, 2.57 inches, occurred at Corydon, Wayne County, on the 5th. Measurable precipitation occurred on an average of 9 days.

SNOW.—The average snowfall for the state was 1.2 inches. By sections the averages were as follows: Northern, 2.0 inches; Central, 1.2 inches; Southern, 0.5 inch. The greatest amount, 6.8 inches, occurred at Northwood, Worth County; at a few stations none whatever occurred.

SUNSHINE AND CLOUDINESS.—The average number of clear days was 15; partly cloudy, 8; cloudy, 8. The duration of sunshine was slightly below the normal, the percentage of the possible amount being 65 at Charles City; 54 at Davenport; 69 at Des Moines; 50 at Dubuque; 49 at Keokuk; and 56 at Sioux City.

WIND.—Northwest winds prevailed. The highest velocity reported was at the rate of 42 miles an hour from the south, at Sioux City, Woodbury County, on the 9th.

EFFECT OF THE FREEZE OF OCTOBER 19-21, 1913, UPON APPLES IN WESTERN IOWA.

By Laurenz Greene, Asst. Chief, Section of Horticulture, Iowa Agricultural Experiment Station.

On the night of October 19th, the temperature at Council Bluffs fell to 22 degrees. This was followed on the 20th by a small amount of sunshine and then cloudy weather in the P. M. Fruit which was frozen solid on the trees thawed out late in the day. The temperature on the night of the 20th fell to 18 degrees and the fruit was again frozen solid. The next day a trace of snow fell but the temperature rose to 38 degrees in the P. M. On the night of the 21st the temperature did not go below 30 degrees. A small amount of rather warm rain fell during the night. On the morning of the 21st there was apparently no frost in any of the fruit except in a very few cases, near the ground or where the fruit was well protected by leaves. This fruit came through these freezes with practically no injury to apples larger than two and one-quarter inches in diameter. All smaller grades seemed to be entirely ruined for ordinary market purposes. They were brown inside and soft. The Ben Davis and Gano seemed to be worse injured than harder varieties like Winesap.

It was interesting to note that on the morning of the 21st when the apples were apparently free from frost that water thrown upon the surface of the fruit immediately froze and remained frozen until about 10:00 o'clock A. M. Fruit frozen as this was should not be picked until after it is entirely free from frost as each finger mark and other bruises will blacken and start decay.

At Hamburg the injury was less noticeable. While definite records of the temperature are not known, at present, the conditions would indicate that the temperature did not go so low in that portion of the state. Thermometers in and about Hamburg recorded temperatures of 22 degres on the morning of the 20th and 18 degrees on the morning of the 21st. Here no apples larger than three-quarters of an inch to one inch in diameter, and only a small percentage of this size were injured. It was reported that nine miles northeast of Hamburg that the No. 1 apples were uninjured and No. 2 apples were all ruined. In all probability this would mean that apples above two and one-quarter inches in diameter were sound while those smaller than two and one-quarter inches were entirely ruined.

A Chicago buyer reported that the conditions in Nebraska were practically the same as those above reported for like latitude. At Nebraska City, there was practically no injury but at points farther north the injury was more severe. The statement was made that the sod orchards suffered more injury than those which were cultivated. All of this frozen fruit was being picked and packed for cold storage purposes, but buyers and growers were emphatic that no fruit should be picked until entirely free from frost, else the keeping qualities in storage would be ruined.

NOVEMBER.

The month was the warmest November since state-wide observations began in 1890; the mean temperature being 44.1°, or 8.2° higher than the normal for Iowa. The latter half of the month was especially warm, and on the warmest days, which were at and near the close of the second decade, the daily means were as much as 25° higher than the normal. The highest temperatures were recorded generally on the 20th and the lowest on the 9th, 10th, or 11th.

The precipitation was slightly less than the normal, but there was a great excess of damp, foggy and cloudy weather during the latter half of the month, during which time nearly all the precipitation fell in the form of rain or snow. There was, however, much less than the usual amount of snowfall. In fact there was no snowfall over the southern half and but little in the northern half of the state; the greatest amount being 3.0 inches in Sioux Center. The mild weather was favorable for all out-of-door operations. The bulk of the corn crop was harvested and plowing was in progress until the close of the month. The mild weather was also favorable for the growth of winter grains and these crops are in excellent condition.

Temperature.—The monthly mean temperature for the state, as shown by the records of 107 stations, was 44.1°, or 8.2° higher than the normal for Iowa. By sections the mean temperatures were as follows: Northern, 41.5°, or 7.8° higher than the normal; Central, 44.3°, or 8.6° higher than the normal; Southern, 46.4°, or 8.2° higher than the normal. The highest monthly mean was 49.4° at Keokuk, Lee County, and the lowest monthly mean, 37.6°, at Rock Rapids, Lyon County. The highest temperature reported was 78°, at Lamoni, Decatur County, on the 19th; the lowest temperature reported was 10°, at Elma, Howard County, on the

11th. The average monthly maximum was 70°, and the average monthly minimum was 16°. The greatest daily range was 57°, at Burlington, Des Moines County. The average of the greatest daily ranges was 35°.

Precipitation.—The average precipitation for the state, as shown by the records of 114 stations, was 1.18 inches, or 0.21 inch less than the normal. By sections the averages were as follows: Northern, 1.01 inch, or 0.30 inch less than the normal; Central, 1.06 inches, or 0.37 inch less than the normal; Southern, 1.47 inches, or 0.03 inch less than the normal. The greatest amount, 3.49 inches, occurred at Corning, Adams County, and the least, 0.20 inch, at Lake Park, Dickinson County. The greatest amount in any 24 consecutive hours, 2.4 inches, occurred at Chariton, Lucas County, on the 29th. Measurable precipitation occurred on an average of 6 days.

Snow.—The average snowfall for the state was 0.4 inch. By sections the averages were as follows:. Northern, 1.0 inch; Central, 0.2 inch; Southern, trace. The greatest amount, 3.0 amount, 3.0 inches, occurred at Sioux Center, Sioux County.

Sunshine and Cloudiness.—The average number of clear days was 11; partly cloudy, 7; cloudy, 12. The duration of sunshine was below the normal, the percentage of the possible amount being 47 at Charles City; 47 at Davenport; 51 at Des Moines; 47 at Dubuque; 38 at Keokuk; and 38 at Sioux City.

Wind.—South winds prevailed. The highest velocity reported was at the rate of 54 miles an hour from northwest, at Sioux City, Woodbury County, on the 7th.

DECEMBER.

December, 1913, was characterized by its mild and comparatively dry weather, and by the fact that the lowest temperature and greatest amounts of snowfall occurred in the extreme southern part of the state. In fact, there were no temperature readings of zero or below over the northern half of the state, except in the extreme northwestern counties, and even there the readings were not as low as in the southern districts. The lowest temperature, —13°, and the greatest amount of snowfall, 7.6 inches, occurred in Taylor County, near the Missouri line.

The weather during much of the month was unusually pleasant for the time of year, but dense fog prevailed on several days during the morning hours. Somewhat colder weather obtained during the last decade of the month, and most if not all the snowfall of the month occurred at that time. A moderate amount of snow fell in the extreme southern part of the state, but elsewhere the amounts were light, none whatever occurring at numerous stations in the extreme north. There were no severe storms, and the month's wind movement was probably the lightest of record for December. Most of the precipitation came during the first week of the month, and light snow flurries occurred between the 20th and the end of the month. There was practically no precipitation between the 7th and the 19th. The amount of precipitation over the state decreased from south to north. Two stations in the north had no precipitation whatever, while Clarinda had 4.73 inches and Corning had 4.70 inches.

The moderate temperature and dry weather was exceptionally favorable for all out-of-door pursuits. Plowing was continued as late as the 20th and live stock was in pasture until near the close of the month. In some localities in the southern part of the state frogs were heard croaking on the 1st and dandelions bloomed until the 18th. Much more than the usual amount of fall plowing has been done and winter grains are reported to be in excellent condition.

TEMPERATURE.—The monthly mean temperature for the state, as shown by the records of 107 stations, was 32.0°, or 8.4° higher than the normal for Iowa. By sections the mean temperatures were as follows: Northern, 29.9°, or 9.0° higher than the normal; Central, 32.6°, or 8.8° higher than the normal; Southern, 33.6°, or 7.4° higher than the normal. The highest monthly mean was 37.0°, at Keokuk, Lee County; and the lowest monthly mean, 25.1°, at Rock Rapids, Lyon County. The highest temperature reported was 65°, at Leon, Decatur County, on the 2d; the lowest temperature reported was —13°, at Bedford, Taylor County, on the 21st. The average monthly maximum was 55°, and the average monthly minimum was 4°. The greatest daily range was 51°, at Bedford. The average of the greatest daily ranges was 31°.

PRECIPITATION.—The average precipitation for the state, as shown by the records of 116 stations, was 1.02 inches, or 0.17 inch less than the normal. By sections the averages were as follows: Northern, 0.21 inch, or 0.82 inch less than the normal; Central, 0.91 inch, or 0.29 inch less than the normal; Southern, 1.94 inches, or 0.61 inch greater than the normal. The greatest amount, 4.73 inches, occurred at Clarinda, Page County, and the least, 0.00 at two stations. The greatest amount in any 24 consecutive hours, 1.68 inches, occurred at Thurman, Fremont County, on the 6th. Measurable precipitation occurred on an average of four days.

SNOW.—The average snowfall for the state was 1.3 inches. By sections the averages were as follows: Northern, 0.3 inch; Central, 0.4 inch; Southern, 3.2 inches. The greatest amount, 7.6 inches, occurred at Bedford; several stations reported no snowfall whatever.

SUNSHINE AND CLOUDINESS.—The average number of clear days was 15; partly cloudy, 5; cloudy, 11. The duration of sunshine was about the normal, the percentage of the possible amount being 47 at Charles City; 43 at Davenport; 58 at Des Moines; 49 at Dubuque; 29 at Keokuk; and 61 at Sioux City.

WIND.—Southwest winds prevailed. The highest velocity reported was at the rate of 48 miles an hour from the north, at Sioux City, Woodbury County, on the 6th.

MONTHLY STATE DATA FOR 1913.

MONTH	Temperature				Precipitation				Number of Days				Prevailing direction of wind
	Mean	Departure from normal	Highest	Lowest	Average	Departure from normal	Greatest	Least	1 in. or more of precip'n	Clear	Partly cloudy	Cloudy	
January	20.9	+1.6	62	—25	0.77	—0.28	2.05	0.04	5	14	9	8	nw
February	20.2	+1.0	70	—24	0.82	—0.24	2.39	0.07	4	14	7	7	nw
March	31.9	—2.1	78	—23	2.48	+0.56	5.88	0.74	9	11	10	10	nw
April	50.2	+1.7	88	16	3.29	+0.46	7.43	1.12	9	15	5	10	s
May	59.4	—0.7	102	30	6.24	+1.74	10.25	3.14	13	11	8	12	se
June	71.5	+2.7	102	33	3.31	—1.21	8.95	0.74	7	19	8	3	sw
July	76.1	+2.7	108	45	1.82	—2.62	6.23	T	5	21	8	2	sw
August	76.6	+4.8	108	40	2.68	—1.31	7.13	0.08	6	17	10	4	se
September	64.5	+0.8	107	19	3.31	—0.10	7.44	0.45	9	15	8	7	se
October	49.2	—2.7	89	—2	3.03	+0.68	7.29	0.35	9	15	8	8	nw
November	44.1	+8.2	78	10	1.18	—0.21	3.49	0.20	6	11	7	12	s
December	32.0	+8.4	65	—13	1.02	—0.17	4.73	0.00	4	15	5	11	sw
Annual	49.7	+2.2	108	—25	29.95	—2.70	10.25	0.00	86	182	89	94	s

"T" indicates amount too small to measure.

DATES OF KILLING FROSTS, 1913

STATIONS	Killing Frosts		STATIONS	Killing Frosts		STATIONS	Killing Frosts	
	Last in spring	First in autumn		Last in spring	First in autumn		Last in spring	First in autumn
Afton	April 12*	Sept. 22	Elkader	May 11*	Sept. 22*	Murray	April 27*	Sept. 22*
Albia	April 13*	Sept. 22	Elliott	April 27*	Sept. 22	New Hampton	April 27*	Sept. 22*
Algona	April 27*	Sept. 22	Elma	May 10*	Sept. 22	Nora Springs	April 28	Sept. 22
Allerton	April 27*	Sept. 22	Estherville	April 28	Sept. 22	Northboro	April 12*	Sept. 22
Alta	April 27*	Sept. 22	Fairfield	April 27*	Sept. 22	Northwood	April 27	Sept. 22*
Alta (near)	----------	Sept. 22	Fayette	April 29	Sept. 22	Odebolt	April 28*	Sept. 22*
Alton	April 28*	Sept. 22	Forest City	April 27	Sept. 22	Olin	May 11	Oct. 18
Amana	April 29*	Sept. 22	Fort Dodge	April 28	Sept. 22	Omaha, Neb.	April 12*	Oct. 20
Ames	April 28*	Sept. 22	Grand Meadow	April 27	Sept. 22	Onawa	April 13*	Sept. 22
Atlantic	April 28*	Sept. 22	Greenfield	April 27	Sept. 22	Osage	April 27*	Sept. 22
Audubon	April 28	Sept. 22	Grinnell	April 27	Sept. 22	Oskaloosa	April 28	Sept. 22*
Baxter	April 27	Sept. 22	Grundy Center	April 28*	Sept. 22*	Ottumwa	April 27*	----------
Bedford	April 25	Sept. 22	Guthrie Center	April 28	Sept. 22	Pacific Junction	April 26*	Sept. 21*
Belle Plaine	April 27*	Sept. 22	Hampton	April 28*	Sept. 22	Pella	April 29*	Sept. 22
Belmond	April 28*	Sept. 22	Harlan	April 27	Sept. 22	Perry	April 28*	Sept. 22
Bloomfield	April 27	Sept. 22	Humboldt	May 11*	Sept. 22	Pocahontas	April 27*	Sept. 22*
Bonaparte	April 27*	Sept. 22*	Independence	April 28*	Sept. 22	Rock Rapids	May 6*	Sept. 22
Boone	April 27*	Sept. 22	Indianola	April 28	Sept. 22	Rockwell City	April 18*	Sept. 22*
Britt	April 25*	Sept. 22	Inwood	April 26	Sept. 22	Sac City	----------	Sept. 22
Burlington	April 27	Sept. 22	Iowa City	April 13	Sept. 22	Saint Charles	April 27*	Sept. 22*
Carroll	April 29*	Sept. 22*	Iowa Falls	April 29*	Sept. 22	Sheldon	April 27*	----------
Cedar Rapids	April 14*	Sept. 22	Jefferson	April 28*	Sept. 22	Sibley	May 6*	Sept. 21*
Centerville	April 25	Sept. 13	Keokuk	April 13	Sept. 22	Sigourney	April 27*	Sept. 22
Chariton	April 27	Sept. 22	Keosauqua	April 29*	Sept. 22	Sioux Center	April 27*	Sept. 22*
Charles City	April 28	Sept. 22	Knoxville	April 7*	Sept. 22*	Sioux City	April 14	Oct. 11
Clarinda	April 28*	Sept. 22*	Lacona	----------	Sept. 22	Spencer	April 28*	Sept. 22*
Clinton	April 29*	Oct. 19	Lake Park	April 27	Sept. 22	Stockport	April 7	Sept. 22
Columbus Junction	Mar. 28	Oct. 21	Lamoni	April 26*	Sept. 22	Storm Lake	April 27	Sept. 22
Corning	April 28*	Sept. 22	Lansing	May 10*	----------	Thurman	April 14*	Sept. 22*
Corydon	April 28*	Sept. 22	Le Mars	April 27*	Sept. 22	Tipton	April 7*	Oct. 20*
Council Bluffs	April 26	----------	Lenox	April 27*	Sept. 22	Toledo	April 29*	Sept. 22*
Creston	April 28	Sept. 22	**Leon**	April 27*	Sept. 22	Washington	April 27*	Sept. 22
Davenport	April 27	Oct. 21	Little Sioux	April 14	Sept. 21*	Washta	May 23*	Sept. 22
Decorah	April 29*	----------	Logan	April 27*	Sept. 22*	Waterloo	April 27*	Sept. 22
Delaware	May 11*	Sept. 22*	Marshalltown	April 28	Sept. 22	Waukee	April 27*	Sept. 22
Denison	April 28*	Sept. 22	Mason City	May 10*	Sept. 22	Webster City	April 28*	Sept. 22*
Des Moines	April 7*	Sept. 22	Monroe	April 27*	Sept. 22	West Bend	April 27*	Sept. 22
Dubuque	April 13	Oct. 21	Mount Ayr	April 12*	Sept. 22	Whitten	April 27	Sept. 22
Earlham	April 29*	Sept. 22	Mount Pleasant	April 27*	Sept. 22	Winterset	April 28*	Sept. 22*

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*Date of last temperature of 32° or lower in spring, or first temperature of 32° or lower in autumn, as the case may be, when frost was not reported.

COMPARATIVE DATA FOR THE STATE—ANNUAL

	Temperature					Precipitation in inches			
Year	Mean annual	Highest	Date	Lowest	Date	Annual	Greatest annual	Least annual	Av. snowfall
1890	48.0	110	July 13	—27	January 22	31.30	45.74	16.00	------
1891	47.3	106	August 9	—31	February 4	32.90	49.05	23.48	------
1892	46.6	104	July 11	—38	January 19	36.58	48.77	24.78	34.2
1893	45.7	102	July* 13	—36	January 14	27.59	33.27	19.19	37.2
1894	49.7	109	July 26	—37	January 25	21.94	29.81	15.65	19.2
1895	47.2	104	May 28	—33	February 1	26.77	35.25	18.57	26.0
1896	48.6	104	July 3	—20	January 4	37.23	51.60	28.68	22.6
1897	47.8	106	July* 23	—30	January 25	26.98	36.18	20.21	38.8
1898	47.7	103	August 20	—25	December 31	31.34	55.47	19.51	40.3
1899	47.3	104	September 6	—40	February 11	28.68	42.06	21.79	23.4
1900	49.3	103	August 3	—27	February 15	35.05	47.33	25.05	25.8
1901	49.0	113	July 22	—31	December 15	24.41	37.69	16.35	38.5
1902	47.7	98	July 30	—31	January 27	43.82	58.80	20.14	28.0
1903	47.2	101	August 24	—27	December 13	35.39	50.53	26.41	19.4
1904	46.3	100	July 17	—32	January 27	28.51	38.93	19.34	29.2
1905	47.2	104	August 11	—41	February 2*	36.56	52.26	24.66	38.3
1907	47.4	102	July 5	—31	February 10	31.60	44.34	20.63	32.8
1906	48.4	102	July 21	—32	February 5	31.61	43.90	19.93	24.0
1908	49.5	101	August 3	—18	January 29	35.26	49.98	24.11	22.7
1909	47.4	103	August* 15	—26	February* 15	40.01	53.48	27.20	49.0
1910	48.6	108	July 16	—35	January 7	19.87	27.99	12.11	23.4
1911	49.5	111	July* 3	—35	January 3	31.37	46.77	19.74	35.3
1912	46.4	104	September 8	—47	January 12	28.89	38.13	15.25	39.5
1913	49.7	108	July 16*	—25	January 8	29.95	45.18	20.31	25.4

ANNUAL NORMALS FOR IOWA, 1890-1913.

Annual normal temperature, 47.9°.

Warmest years, 1894 and 1913, with mean temperature of 49.7°.

Coldest year, 1893, with mean temperature of 45.7°.

Annual normal precipitation, 31.39 inches.

Wettest year, 1902, with total precipitation of 43.82 inches.

Driest year, 1910, with total precipitaion of 19.87 inches.

Average annual snowfall, 30.5 inches.

Greatest annual snowfall, 49.0 inches in 1909.

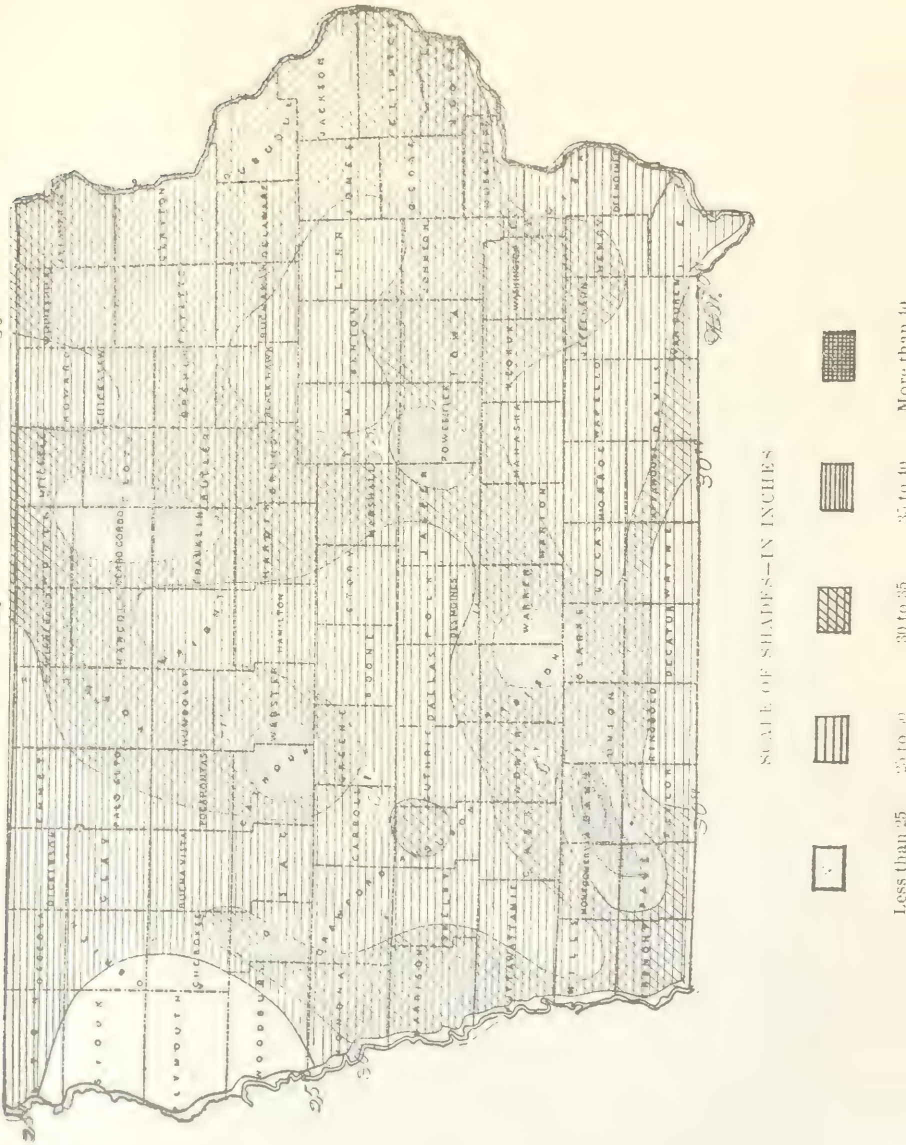
Least annual snowfall, 192 inches in 1894.

Average number of days with 0.01 inches or more precipitation, 83.

Prevailing direction of wind, northwest.

Average number of clear days, 165; partly cloudy, 102; cloudy, 98.

TOTAL PRECIPITATION, 1913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ALLAMAKEE
SIOUX
O'BRIEN
CLAY
PALO ALTO
HANCOCK
CERRO GORDO
FLOYD
CHICKASAW
FAYETTE
CLAYTON
PLYMOUTH
CHEROKEE
BUENA VISTA
POCAHONTAS
HUMBOLDT
WRIGHT
FRANKLIN
BUTLER
BREMER
BLACK HAWK
BUCHANAN
DELAWARE
DUBUQUE
WOODBURY
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HAMILTON
HARDIN
GRUNDY
TAMA
BENTON
LINN
JONES
JACKSON
MONONA
CRAWFORD
CARROLL
GREENE
BOONE
STORY
MARSHALL
CEDAR
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SHELBY
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DES MOINES
JASPER
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MONTGOMERY
ADAMS
UNION
CLARKE
LUCAS
MONROE
WAPELLO
JEFFERSON
HENRY
DES MOINES
FREMONT
PAGE
TAYLOR
RINGGOLD
DECATUR
WAYNE
APPANOOSE
DAVIS
VAN BUREN
LEE
SCALE OF SHADES—IN INCHES
Less than 25
25 to 30
30 to 35
35 to 40
More than 40

CLIMATE AND CROP REVIEW

Season 1913.

WEATHER AND CROP REVIEW BY MONTHS.

The year 1913 was characterized by a cold and wet spring, an excessively hot and dry summer, an early autumn with frosts and freezing temperatures in September, followed during the last two months by mild and generally pleasant weather. The drought during the summer months was exceptionally severe in the southern counties, and materially reduced the yield of corn in that section and reduced the output of potatoes in all parts of the state. But for the state as a whole the output of soil products was considerably above the average of past years, and high prices made it the most valuable crop ever produced in the history of the state.

January and February were unusually pleasant, with an excess of temperature and a deficiency of precipitation although there was nearly the normal amount of snow which was beneficial to fall sown grains during the time of the lowest temperatures. On several days the temperature was considerably below zero but there were no severe winter storms.

March was cold, wet and changeable with frequent high winds, and in many localities destructive wind storms. The most marked features were the low temperatures on the 2d and the destructive wind storms on the afternoon and night of Easter Sunday, the 23d. The 2d was not only the coldest day of the month but at nearly all stations it was the coldest day of the winter, and at many stations the temperature was the lowest of record for the month of March. Precipitation was frequent and at times heavy between the 12th and 25th; the greatest amounts being recorded between the 13th and 15th. As a whole, the month was unfavorable for farm operations. Practically no field work was done until the last three or four days, when a little plowing and seeding was done. Fall sown grains, clover, grasses and fruits were, however, in fine condition with scarcely any indications of winter killing.

With the exception of the five days from the 7th to 11th, inclusive, when precipitation was almost continuous, April was a pleasant month and favorable for farm operations. One of the heaviest snowstorms of record occurred over the west central and northwestern counties on the 9th and 10th. Considerable damage was done to trees, and in Sioux City, where more than 20 inches fell, street car service was suspended for 36 hours, and telephone and lighting service were badly demoralized. Freezing temperatures occurred in all parts of the state on one or more nights and were unreasonably low between the 26th and 28th. There was a slight excess of precipitation. Owing to the wet weather during the first 11 days of the month farm work was delayed, but by the close of the month practically all of the seeding of small grain was finished, early potatoes were planted and much ground was prepared for corn. Grasses and winter grains were in fine condition and fruit trees were showing abundance of bloom in southern and beginning to blossom in northern counties.

With the exception of short periods of unusually high temperatures at the beginning of the close of the month, May was cold and wet. Rain fell at some place in the state on every day of the month, and as a result plowing and corn planting were delayed until the 27th.

June was characterized by low temperatures during the first half, and almost continuously high temperatures during the latter half of the month. At some stations the temperature between the 7th and 12th was lower than ever before recorded in June. Corn probably never made more rapid growth than it did during the latter half of the month, and notwithstanding the fact that planting was delayed many fields were knee to waist high and much of the crop had been laid by in the southern counties by the close of the month, and general crop conditions were excellent.

July was the warmest month of that name since state-wide observations began in 1890, except 1894 and 1901, and it was the driest since 1894. Droughty conditions prevailed in all parts of the state, and were severe over the southeastern counties. However, sufficient rain fell over the southwestern and northern counties to keep corn in excellent condition, but pastures and potatoes suffered for moisture.

August was characterized by an excess of temperature and a deficiency of rainfall, but those features were more pronounced in the southern than in the northern part of the state. In the southwestern counties it was the warmest August on record, and one of the driest. High temperatures were almost continuous. The showers were local and generally light, except on the night of the 10th-11th, when heavy rain fell in some localities and was accompanied by damaging wind squalls over the central counties where corn was blown down and uprooted. The second and only other storm of importance occurred over the northern counties on the night of the 17th-18th. Except in some of the northern counties, all vegetation suffered by the absence of moisture and the long continued high temperatures. At the close of the month pastures were brown, late potatoes were practically a failure, and corn in the southern counties was suffering. Wells were failing and small streams were dry in the southern part of the state.

The high temperatures and droughty conditions continued with increased severity during the first week of September. It was the hottest week of record in September. The daily maximum temperature readings were 100° or higher over the southern and considerably above 90° in the northern counties. After the 7th the temperature was lower and light frost occurred in the northern districts on the 13th, and killing frost and freezing temperatures were general on the 22d. Owing to the high temperatures during July, August and the early part of September, the bulk of the corn crop escaped serious injury by the freezing temperatures on the 22d. Rains during the second and third decade of the month revived pasturage, replenished the water supply and put the ground in excellent condition for fall plowing and seeding and much of that wok was done.

The fore part of October was generally warm and pleasant, although showers were frequent between the 4th and 10th, while the last 15 days were cold and inclement. As a whole, the month was colder than usual, and had more than the average precipitation as well as an excess of snowfall. As a whole, the month was favorable to agricultural interests. The rains were beneficial to grass and small grains and facilitated plowing. Corn husking began between the 15th and 23d, and by the close of the month much of the crop was in the crib.

November was the warmest month of that name since Statewide observations began in 1890; the mean temperature being 44.1°, or 8.2° higher than the normal for the State. The latter half of the month was especially warm, and on the warmest days, which were at and near the close of the second decade, the daily means were 25° higher than the normal. The precipitation was slightly less than the normal, but there was an excess of damp, foggy and cloudy weather during the latter half of the month, during which time nearly all of the precipitation fell in the form of rain or snow. There was, however, much less than the usual amount of snowfall. In fact, there was no snow over the southern and but little in the northern half of the State. The bulk of the corn crop was harvested and plowing was in progress until the close of the month. Winter grains made a good growth and were in fine condition.

December was characterized by its mild and dry weather, and by the fact that the lowest temperatures and greatest amounts of snowfall occurred in the extreme southern part of the State. The temperature was not below zero in the northern half of the State, except in the extreme northwestern counties, and there the readings were not as low as in the southern districts. The lowest temperature, —13°, and the greatest amount of snowfall, 7.6 inches, occurred in Taylor County, near the Missouri line. There was no rain or snow at several stations in the extreme northern counties. Plowing was continued and stock was in pasture as late as the 20th. In some localities in the southern part of the State, frogs were heard croaking on the 1st and dandelions bloomed until the 18th. Much more than the usual amount of fall plowing had been done and winter grains were reported to be in excellent condition.

CLIMATE AND CROP BULLETINS

SUMMARIES OF WEEKLY BULLETINS ISSUED IN THE SEASON OF 1913.

Bulletin No. 1. For the week ending April 6.—The six months from October 1, 1912, to March 31, 1913, were as a whole mild, dry and pleasant, with no severe winter storms. The average temperature for the period was about two degrees above, and the precipitation slightly above the normal. The excess of precipitation was, however, made up during the first ten days of October and the month of March, during which time rains or snows were frequent and heavy, but the amount of snow during the winter months was much smaller than usual. March was cold and stormy, with frequent rain and snowstorms and unusually high winds which have delayed field work. The soil is, however, in fine physical condition and with favorable weather plowing and seeding will become general during the coming week. Some oats and spring wheat were sown early last week, but the work was stopped by the rain and snow on the 3d and 4th. Fall sown grains, clover, timothy, blue grass, live stock and fruit trees wintered well and are now generally in excellent condition. More than the usual amount of hay and rough feed are left on hand. The acreage of winter wheat is reported to be somewhat greater than the area harvested last year, and with favorable weather conditions the acreage of other small grains will be up to the normal. Fruit buds are still dormant, and the indications as present are favorable for a good crop of all kinds of fruit except peaches.

Bulletin No. 2. For the week ending April 13.—The past week was unseasonably cold and stormy. The average daily temperature was about 7 degrees below, and the average rainfall nearly two inches more than normal. Rain or snow fell almost continuously from Sunday night to Friday. Over the northern half of the state the snowfall was heavy on the 10th; the amounts ranging from one inch in the southern part of that section to twenty inches in the northwestern counties. The sunshine was nil until Saturday. Freezing temperatures occurred on one or two mornings over a large part of the state, but the only damage resulting from the cold, wet weather was in delaying the necessary work of an already belated season, and in the small loss of young pigs and chickens. Unsheltered stock suffered during the storm. The freezing temperatures did no damage to fruit as the buds are still dormant, and in good condition, as are also winter grains and grasses. Compared with the average of past years the season is now fully two weeks late, but the soil is saturated with moisture, and only warmth and sunshine are needed to quicken the growth of vegetation.

Bulletin No. 3, for the week ending April 20.—Nearly a full week of bright sunshine, with practically no rain has started the growth of all vegetation, put the ground in fairly good condition, and enabled farmers to do a great amount of field work. The average temperature was about seven degrees above the normal, and the daily maximum temperatures ranged from 60 to 80 degrees. Except on low and untiled ground, where the soil is still too wet, rapid progress was made in seeding and plowing. The bulk of the oats is now in, and with favorable weather, all small grain will be sown before the close of the coming week. In many localities early potatoes have been planted, and a good start has been made in preparing ground for corn. Grass is starting nicely, and is earlier than usual although farm work is two weeks late. Winter grains are in fine condition. Peach and plum trees are in blossom in the extreme southeastern counties and all fruit trees show an abundance of healthy buds.

Bulletin No. 4, for the week ending April 27.—The past week was, as a whole, favorable for farm work, and over the larger part of the state, rapid progress was made in sowing small grain and plowing for corn. Work was, however, retarded in the northwestern counties by heavy rains on the 23d and 24th, which were followed in all sections by light to heavy frosts on the last three mornings of the week.

About 90 per cent of the seeding has been finished, and the remainder will be completed within the next few days. In the northwestern counties, where the rainfall was the heaviest and field work seriously retarded, considerable of the acreage intended for oats will be reserved for corn. The early sown grain is up and shows a good stand. Grass is growing nicely, and in some localities stock is in pasture. Fruit trees are still in fine condition. Plum trees are in blossom in the central districts and all fruit buds are beginning to swell in northern counties. The spring pig crop is reported to be short in many localities and especially where cholera was prevalent last year.

The indications at the close of the week are favorable for rising temperature, and with warm weather corn, planting will begin during the coming week.

Bulletin No. 5, for the week ending May 4.—Another week with much sunshine and no rain until Friday night has advanced farm work rapidly. A large acreage of ground is ready for the planter, and in many localities, in the southern counties, corn planting has begun. The first few days of the week were too cool for normal growth of vegetation, and the heavy frost on the 28th endangered the prospects of a fruit crop, but late reports do not show any damage done. After the 28th the days were warm enough to bring the average temperature for the week to about eight degrees above the normal. Copious to heavy showers occurred Friday night, Saturday or Sunday in all parts of the state. The needed moisture will be highly beneficial to all vegetation, and especially to small grains, grasses and early potatoes.

The Iowa Horticultural Experiment Station at Council Bluffs reports: "All varieties of apples show a full crop of blossoms, even where they bore heavily last fall; the Jonathan, perhaps, showing the heaviest. Next in order come Ben Davis, Missouri Pippen, Northwestern, Winesap, and Grimes. The Duchess, Salome, Arkansas and Iowa Blush are also heavily loaded. Plums showed a full set of bloom, but from all appearances did not fertilize well. Sour cherries full crop. Peaches in the southern part of the state will perhaps make 75 to 80 per cent crop. Pears show nearly full bloom. Berries wintered well. In many vineyards 10 to 20 per cent of the older vines appear dead. Conditions are unfavorable for fertilization as scarcely an insect is working on the blossoms. The pollen is withering so that if the present cool and rainy weather prevails many of the fruits will not develop.

Bulletin No. 6, for the week ending May 11.—The past week was cold, and over the southern and eastern counties unusually wet. Showers were general on Thursday and Friday, and in many localities on Monday. The average temperature was about four degrees below the normal, and light frost occurred in many sections on two or three mornings, but no material damage was done to fruit, which is still in good condition. Where the rainfall was not too heavy rapid progress was made in preparing ground for corn, and considerable corn was planted especially in the northwestern counties. Corn planting will be general during the coming week. The rains were beneficial to small grain, grass and potatoes, and in the eastern counties, where the soil had been dry, it put the ground in good condition for plowing. Most of the live stock is now in pasture.

The following report by the secretary of the Iowa State Horticultural Society shows the average condition of fruit on May 1st: Apples, 93 per cent; pears, 90; American plums, 90; domestic plums, 75; Japanese plums, 80; cherries, 89; peaches, 79; red raspberries, 77; black raspberries, 88; blackberries, 89; currants, 94; gooseberries, 90; strawberries, 84 per cent of a full crop. The average for all crops is 85.5 per cent, the highest since 1901 when it was 4.5 per cent higher.

Bulletin No. 7, for the week ending May 18.—Reports from nearly all parts of the state tell about the same story of cool, cloudy weather, frequent and heavy showers and delayed farm work. The temperature was, however, but slightly below the normal over the southern half of the state, and the rainfall over the southern tier of counties was considerable less than one inch. Over the northern sections the temperature was four to eight degrees below the seasonable average and the fainfall was much in excess of the normal, especially in the west central and northwestern counties where creeks were out of their banks and much bottom land was flooded. Probably not more than one-fourth of the corn has been planted, and there is much ground yet to be plowed. Except for delaying planting and plowing, the rains have been generally beneficial. All small grain and grass crops are in excellent condition. Orchard and small fruits are unusually promising.

Bulletin No. 8, for the week ending May 25.—Another unfavorable week has been added to the record of this belated season. The average temperature was about 6 degrees below, and the rainfall was much in excess of the normal over the larger part of the state. The first half of the week was especially unfavorable, it being cool, cloudy and wet, but the latter half was somewhat better, and gave two days of sunshine. Farm work was practically at a standstill until Friday, but corn planting was rushed on Friday and Saturday. Probably not more than 30 or 35 per cent of the crop has been planted, and unless drier weather and more favorable conditions come soon the anticipated acreage of corn will be materially reduced. Much of the corn that is up is yellow, and some of the later planting is reported to be rotting in the ground. The cold, wet and cloudy weather is also detrimental to garden truck, and is causing too rank a growth of oats, wheat and clover. Light frost occurred in many localities on the morning of the 23d, but no damage was done, and the fruit prospects are still promising.

Bulletin No. 9, for the week ending June 1.—The last week of May brought a marked improvement, and the weather conditions during the six working days were ideal for field work and the germination and growth of vegetation. Excessively high temperatures and almost continuous sunshine prevailed, with no rain after Monday noon, except a few light local showers on Friday morning, until Saturday night. Rapid progress was made in planting corn, and 80 to 85 per cent of the crop is now in. The early planting is up and shows a good stand. Cultivation is in progress in many fields, but there is considerable plowing yet to be done on low wet ground. With a continuance of the warm, dry weather practically all of the corn will be planted by the close of the coming week, but if wet weather prevails the acreage will be considerably less than it was last year. Winter wheat and rye are heading in southern, and rye is in blossom in central counties. All small grain, grass and clover are making rank growth. Potatoes and garden truck are doing nicely, and fruits are promising.

Bulletin No. 10, for the week ending June 8.—With the exception of heavy local rains in a few localities and the cool weather during the last two days, the past week was ideal for farm work and the growth of vegetation. The average temperature was very nearly the normal, and over the larger part of the state the rainfall was much less than the seasonable average. A torrential downpour occurred in Poweshiek county on Friday afternoon, which did a great deal of damage to crops, railroads and other property. At Grinnell, 4.75 inches of rain fell between 3 p. m. and 6:30 p. m. The bulk of the corn is planted, and much of it has been cultivated once. There is however, some low land which is still too wet to plow or plant. The late planting is coming strong and is growing rapidly. Small grain is getting rank, too rank in fact for heavy yields. A large hay crop is assured, and pastures are in excellent condition. In many sections plums did not set well, but apples and small fruits are still promising.

Bulletin No. 11, for the week ending June 15.—With the exception of light local showers over the northern half of the state on Friday night or Saturday, the week was dry and generally clear. The temperatures were, however, unseasonably low during the first four days, and light frosts occurred in many localities on one or more nights. While the weather was too cool for corn and garden truck all conditions were exceptionally favorable for field work, and the cultivation of corn has progressed rapidly. About all of the early planted fields have been plowed once and many of them twice. Practically all of the corn is planted, but some low ground that was intended for corn is still too wet to plow and will be used for cane, millet or buckwheat. The acreage of corn will, however, be about the same as last year. The cool, dry weather has been beneficial to small grain, most of which is heading nicely and is in fine condition. Considerable alfalfa was cut and put up without injury by rain, and clover will soon be ready to harvest. Haying will begin in the southern counties during the coming week, with every indication of heavy yields. Strawberries are beginning to ripen, but need rain to mature a full crop. The week closes with much warmer weather, and all indications are promising, but rain would be acceptable to soften the surface of the ground.

The following summary by the secretary of the state horticultural society shows the average condition of fruit on June 1st: apples, 73 per cent; pears, 48; American plums, 51; domestic plums, 48; cherries, 54; peaches, 71; red raspberries, 77; black raspberries, 83; blackberies, 85; grapes, 89; currants, 78; gooseberries, 70; strawberries, 76 per cent of a full crop.

Bulletin No. 12, for the week ending June 22.—Excessively high temperatures and bright sunshine prevailed until Friday, when light to heavy showers occurred in nearly all parts of the state. In some localities the showers were unusually heavy, while in others the amount of rainfull was only a trace. Over a strip about two counties wide, from Polk to Fremont county, and over Mahaska, Washington, Johnson, Linn, Iowa, Scott and Clinton counties, the amounts ranged from one to more than three inches. The high temperature made corn grow rapidly, and the dry, hot weather checked the tendency to rankness in small grain. The conditions were favorable for field work, and cornfields are now generally clean, and much clover and alfalfa and some slough grass was put up in fine condition. The dry weather, however, cut the strawberry and cherry crops short, and was beginning to affect pastures, oats, potatoes and garden stuff, but the late rains will be of great benefit to all growing crops. Owing to cool weather at pollinating time apples are dropping badly.

Bulletin No. 13, for the week ending June 29.—Under the combined effects of high temperatures, bright sunshine and sufficient moisture corn has made exceptionally rapid growth, and much of it is now up to the average stage for this time of the year. Probably a third of the crop in the southern counties has been laid by in good condition. High temperatures have been continuous, the average daily excess being about 6 degrees, and during the last four days the maximum readings were above 90 degrees. General and, in many localities, heavy showers occurred on the night of the 24th and the 25th; the greatest amounts being over the southern and extreme northern counties, where they ranged from one to more than three inches. Winter wheat and rye are beginning to ripen in southern and central counties, and the harvest will begin during the coming week. Reports vary as to the condition of oats, but over the larger part of the state, both the straw and heads are short. In most cases they are, however, filling fairly well. In many localities small grain was badly lodged by the wind squalls accompanying the thunderstorms on Tuesday night. In the vicinity of Pocahontas and Cherokee counties small grains, and especially oats, have been seriously injured by dry weather. Haying is in progress, and the crop is being secured under favorable conditions. Potatoes and pastures are still doing well. Apples continue to drop badly.

Bulletin No. 14, for the week ending July 6.—Another week of hot weather, with local showers over the larger part of the state, has brought corn fully up to the average for the season of the year. The fields are clean; the plants are strong and vigorous and of good color, and are knee to waist high. The average temperature was about 5 degrees above the normal, but the rainfall was deficient except in a few localities in the northern counties, where heavy local showers, accompanied by high winds and some hail, occurred. Over a large area in the southern part of the state there was no rainfall. The weather as a whole was exceptionally favorable for haying and harvesting. Much clover hay was put up in fine condition, and probably half of the winter wheat and rye is in shock in southern sections. Oats and barley have improved during the last ten days and are filling well, although the oats straw is shorter than usual. Pastures, potatoes and gardens continue in good condition, but rain would be beneficial, and in some localities is badly needed. Hog cholera is again appearing in some of the western counties.

Bulletin No. 15, for the week ending July 13.—One more week of favorable weather has been added to this auspicious mid-crop season. The temperature was about normal, and cooler than the two preceding weeks. Showers were general on Friday except over the extreme southeastern counties, and the amounts of rainfall exceeded an inch in many localities. Rapid progress was made in haying and harvesting. Clover hay is exceptionally heavy and timothy is fair to good. Much winter wheat, rye, early oats and barley are in shock, and threshing has begun in southern counties. Late oats are beginning to ripen and will be ready to cut in a week or ten days. Winter wheat is a good crop, but the yield will not be as great as last year. The showers were of great benefit to corn, pastures, late potatoes and garden truck, but more rain is needed for corn, which is beginning to tassel and will require plenty of moisture to produce heavy earing. Apples continue to drop badly.

Bulletin No. 16, for the week ending July 20.—The first four days of the week were excessively hot, the daily maximum temperatures ranged from 100 to 104 degrees, over the southern counties on one or more days, and as the rainfall was inappreciable over the large part of the state, late crops are beginning to feel the effect of the dry, hot weather. Late oats, potatoes, garden truck and pastures have already been damaged to some extent by the intense heat and lack of moisture. In some localities, corn on light sandy soil is beginning to curl during the day, but corn on good soil and in well cultivated fields is holding up remarkably well and making rapid growth. All of the early planted corn is in tassel and is earing nicely. The dry, hot weather has been favorable for haying and harvesting and the time has been well improved. Most of the haying is finished and the crop has been secured in excellent condition. Nearly all of the winter wheat and rye has been cut and much of the early oats, barley and spring wheat and some late oats is in shock. Threshing is progressing in southern counties, and the early reports indicate more than an average crop of winter wheat of extra good quality. Some fields yield from forty to fifty bushels per acre, but the average will be about thirty bushels. Rain is needed for all growing crops.

Bulletin No. 17, for the week ending July 27.—The past week has been moderately cool and pleasant, with a marked deficiency of rainfall over the southern half of the state, where the average amount of precipitation was only .04 inch. Frequent and well distributed showers prevailed over the northern half of the state, with an average of .81 inch for the week.

Haying is practically finished and the bulk of the small grain is in the shock. Threshing is being rushed, and early reports indicate fair to extra good yields. Late oats were damaged some by the hot weather that prevailed during the third week of the month, but are turning out better than anticipated two weeks ago. All growing crops are in a flourishing condition in the northern counties, but corn, potatoes, pastures and garden truck need rain badly in the southern half of the state. In some localities in the southeastern counties, where there has been only .05 inch of rain during the last thirty days, corn is firing and is at a standstill, pastures are brown, late potatoes are dried up and water for stock is getting scarce. The dry weather has, however, enabled farmers to secure the hay and small grain crops in good condition

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Bulletin No. 18, for the week ending August 3, 1913. The week was hot and dry; the temperature being up to or about 100 degrees on two days, and the rainfall was almost inappreciable, there being only a few light and widely scattered showers. All vegetation is badly in need of rain. Pastures and potatoes have been seriously injured, but corn on good soil is holding its own remarkably well, and nearly all of it in the northern half of the state is still in good condition. In the southern counties, where there has been little or no rain since June 25th, corn has been damaged, but reports as to the amount of injury done are conflicting. Some claim that if rain comes soon there will have been little or no damage, while others say that there will not be more than half of a crop regardless of future condition. An average of about 1,000 reports indicates that there was a loss of only four points in condition of corn in the state between July 1st and August 1st.

Bulletin No. 19, for the week ending August 10.—The drouthy conditions continued with increased severity until the 10th, when copious showers occurred over the larger part of the state, and were followed on Sunday night by heavy rains, accompanied by high winds in many localities. On the 8th the temperature ranged from 100 to 105 degrees over the southern sections, and were attended by hot winds. Corn in the northern part of the state has held its own remarkably well and gives promise of a good crop. In the southern counties corn has steadily retrograded and the condition has been reduced 20 to 50 per cent since July 15th. While much of the damage to corn is irreparable the rains will greatly improve the general condition and prevent further injury. The rains will also be of great value to potatoes, pastures, meadows and gardens, and will increase the water supply, which was getting scarce in the southern counties.

Bulletin No. 20, for the week ending August 17.—The week was excessively hot and generally dry, but the heavy rains on the night of the 10th, and the local showers that occurred on several other days gave sufficient moisture for present needs. The showers on the night of the 10th were better distributed than was indicated by the few telegraphic reports given in the last bulletin, but they were, in many localities, accompanied by high wind and severe squalls which did considerable damage to corn. The worst damage was done over a strip about ten to fifteen miles wide extending from Guthrie to Jasper counties. Within that area corn was badly lodged and some of it was blown down but much of it is up again, and the final output will not be reduced as much as estimated soon after the storm. Damage was also done by the wind in other sections of smaller area, but the injury to the crop as a whole will be light in comparison to the vast amount of benefit resulting from the abundant moisture. The corn crop as a whole was greatly benefited, but the rain came too late to improve the early corn in the southern counties where the drought has been severe and of long duration. Late potatoes, garden truck, pastures, meadows, and fruits were also greatly benefited by the rains. Fall plowing has begun.

Bulletin No. 21, for the week ending August 24.—High temperatures continued until Thursday night, and this, with excessive humidity, made the weather conditions oppressive during the first four days. The last three days were clear, cool and pleasant. The rain fall was unevenly distributed; the larger amounts being recorded in the northern and a few of the southeastern counties; but it was generally ample for the needs of all growing crops and for fall plowing and seeding, except in the southwestern district where the amounts were small. Some of the local showers, in the northern counties, on the night of the 17th were accompanied by heavy rain, high winds and severe electrical storms which did considerable damage to buildings and blew down much of the corn. The rains have been of great benefit to late corn, late potatoes and pastures, but were insufficient in the southern part of the state to have any effect on the failing wells. Corn is making rapid advancement toward maturity, and some of the early planting will be safe from harm by frost by the end of the coming week. While corn has been materially injured by the drought, and especially in the southern districts, the state as a whole will produce a full average crop. With normal weather during the remainder of the season the average yield will not be less than thirty-five bushels per acre. If this estimate is realized the state will produce about 330,000,000 bushels. Rapid progress has been made in threshing, and this work is nearly finished over the southern half of the state. The average yields of grain, as given in the former bulletins, are being maintained. Where the rainfall has been sufficient, fall plowing and the preparation of the ground for fall seeding is being pushed. Pastures have been greatly benefited.

Bulletin No. 22, for the week ending August 31.—Although the nights were cool the days were hot, making the average daily temperature about five degrees above the normal. The sunshine was excessive; there being scarcely any cloudiness until Saturday afternoon, and there was practically no rainfall in the state until Sunday morning, and then only a few light showers in the northeastern counties. Corn is doing as well as could be expected under the present conditions. In the southern part of the state, where the drought has been most severe, much of the early planted corn is dry enough to cut, and the binders are at work in some fields. Under the effects of the rains of two weeks ago late corn is filling out fairly well, and in the northern counties where the rainfall has been the most plentiful the crop will be fully up to if not above the average of past years, but elsewhere the present dry, hot weather in forcing it toward maturity too rapidly for the best results. The dry weather is also damaging apples, pastures and late potatoes, and delaying plowing. In southern districts wells are again failing and pastures are brown. In some sections stock is being given almost full winter rations.

Bulletin No. 23, for the week ending September 7.—The past week was the hottest ever before recorded in the state during September. The daily maximum temperatures were above 90 degrees in practically all sections, and in the southern counties the average maximum temperatures ranged from 100 to 103 degrees. The sky was nearly cloudless and the sunshine intense. There was no rainfall except a few light showers over the northern districts on Tuesday night. The intense heat, bright sunshine and brisk winds have dried the ground and all vegetation rapidly. Corn is being rushed toward maturity, and much of it in the southern part of the state is dry and dead. Corn binders have, however, been at work during the entire week. The drought and hot weather has also been very damaging to late potatoes, grass and fruit, and if rain does not come soon the acreage of fall sown grain will be materially reduced. Potatoes are practically ruined in many sections, pastures are dry and brown, wells are failing and water for stock is scarce in the southern counties.

Bulletin No. 24, for the week ending September 14.—A marked change in temperature occurred on the 8th, and the past week was cool and pleasant. The average temperature was, however, slightly above the normal, although light frost was observed in many localities on Friday and Saturday mornings. Copious to heavy rains fell in all parts of the state, except the extreme southeastern and northwestern counties, on Wednesday night and Thursday. Pastures have revived and show considerable improvement, but the rains came too late to be of benefit to corn or late potatoes except in a few localities where the potato vines were still green. The rains were, however, sufficient to facilitate plowing in many sections, but not enough to be of material benefit to the water supply. The excessively hot, dry weather during the first seven days of the month hurried corn to a premature death and stopped the filling process that usually occurs during all of September and part of October, and as a result the crop will be lighter than was indicated on September 1st. Much corn was cut and many silos were filled during the week.

Bulletin No. 25, for the week ending September 21.—The past week was cooler than usual, the average daily deficiency in temperature being about 4 degrees, and the week closes with a cool wave which will probably ably result in light to heavy frost tonight. Light to copious showers occurred on several days, and while there has not been enough moisture to effectually break the drought or increase the water supply, the ground has been softened and much plowing and seeding of winter wheat has been done. Pastures and meadows have been greatly improved and in some sections late potatoes have been benefited. Potatoes will, however, yield only about 50 per cent of a normal crop. The bulk of the corn is now beyond danger of injury by frost, and practically all of it will be matured by the close of the month. Probably a little more than the usual amount of corn has been put in shock, and the amount cut for ensilage is much greater than ever before. Reports received Monday morning, September 22d, show that freezing temperatures occurred in all parts of the state, the lowest reported being 21 degrees at Sibley, Osceola County.

IOWA CROP REPORT, JUNE 1, 1913.

Following is a summary showing average condition of crops on June 1st, as compared with the average of past years on that date: corn, 80 per cent; oats, barley and rye, 95; spring wheat, 94; winter wheat, 96; flax, 90; potatoes, 87; tame hay and alfalfa, 102; wild hay, 100; pastures, 103.

Last year on June 1st, the conditions were as follows: corn, 92; oats, 100; spring wheat, 96; winter wheat, 90; barley, 99; rye, 95; flax, 99; potatoes, 98; hay, 95; alfalfa, 94; pastures, 99 per cent.

The Secretary Iowa State Horticultural Society reports conditions of fruit as follows: apples, 73 per cent; pears, 48; American plums, 51; domestic plums, 48; cherries, 54; peaches, 71; red raspberries, 77; black raspberries, 83; blackberries, 85; grapes, 89; currants, 78; gooseberries, 70; strawberries, 76 per cent of a full crop.

IOWA CROP REPORT, JULY 1, 1913.

Acreage of Farm Crops and Estimated Condition of Staple Crops and Fruit.

Reports received July 1st, from county and township correspondents of the Iowa Weather and Crop Service, show the following results as to the acreage and average condition of staple farm crops, and the condition of fruits.

Corn.—The estimated number of acres of corn planted is 9,434,500, or an increase of only 14,067 acres, as compared with the area reported by the township assessors for 1912. There would have been a much greater increase but for the fact that the weather was wet and cold at planting time, which necessitated the abandonment of a large acreage intended for corn. The average condition of corn on July 1st was placed at 93 per cent as against 89 per cent on July 1, 1912.

Oats.—The area of oats is estimated to be 4,804,400, or a little more than one per cent less than the area harvested last year. The average condition is 91 per cent, or 9 per cent less than on July 1, 1912.

Wheat.—The area of winter wheat is placed at 505,740; and spring wheat, 365,300, making a total wheat acreage of 871,040 acres, or a decrease of 6,270 acres, as compared with the acreage reported by township assessors for 1912. There is, however, an increase of 7,800 acres in the area of winter wheat. The estimated condition of spring wheat is 92 per cent, and winter wheat 97 per cent, as compared with 95 per cent for spring wheat and 90 for winter wheat on July 1, 1912.

Barley.—Acreage sown 368,600 acres; condition 91 per cent or the same as last year at the same time.

Rye.—Acreage of rye sown 69,830; condition of the crop, 97 per cent, or one per cent better than on July 1, 1912.

FLAX.—The acreage of flax is 22,255 or 1,860 acres less than was seeded last year. Condition 92 per cent.

POTATOES.—The acreage of the potato crop is estimated to be 117,000 acres, which is about 3,000 acres less than was planted last year. Condition of crop, 94 per cent.

HAY.—The acreage of tame and wild hay is 3,359,365, or a decrease of 30,700 acres. Condition 97 per cent, or 11 points better than on July 1, 1912.

ALFALFA.—Area, 51,490 acres, which is an increase of about 11 per cent over last year. The condition on July 1st was * * *

PASTURES.—The acreage is about 99.5 per cent, and the condition is 101 per cent, or two points better than last year.

APPLES.—A summary of the reports on apples for July 1st shows about 82 per cent of the 1909 crop, which was, according to the 1910 census, 6,746,668 bushels. The estimates would indicate a production of about 5,500,000 bushels for the state in 1913.

The estimates from the six leading apple counties of the state, Fremont, Mills, Pottawattamie, Harrison, Page and Taylor, which produced 26 per cent of the total crop of the state in 1909, shows only 70 per cent of the 1909 crop or 1,268,318 bushels for 1913 against 1,803,469 bushels for 1909.

Railroad data show that 70 per cent of the crop of Mills and Fremont counties was shipped out to foreign markets in 1909. On this basis, these six counties will export about 300,000 barrels this year or about 1,700 cars. But as shown below diseases and insects will cut this estimate down.

Of the total apple crop it is estimated that about 25 per cent are summer apples, about 30 per cent fall apples and about 45 per cent are winter apples. Apple scab and worms are shown to be abundant with an average of only 15 per cent of the orchards of the state being sprayed.

PLUMS.—An average of the reports show about 65 per cent of a crop of plums.

GRAPES.—The grape crop is reported good from all parts of the state and an average of 92 per cent of a full crop is estimated.

IOWA CROP REPORT, AUGUST 1, 1913.

Following is a summary of reports from crop correspondents on August 1st. The average condition of corn was placed at 89 per cent, or four points lower than on July 1st. This, however, does not give an accurate idea of the change in condition of corn that has taken place since the middle of July, when it was estimated to be fully up to the average condition of past years, or 100 per cent. The dry weather and excessively high temperatures during the latter half of the month lowered the condition materially, and by the end of the month the crop was in a critical condition over the southern half of the state, where the rainfall had been extremely light. The estimated condition of pastures is 86; potatoes 75, and flax 88 per cent, showing a loss of 15 per cent in pastures, 19 in potatoes, and 4 per cent on condition of flax since July 1st.

On August 1st, 1912, corn was rated at 93 per cent, potatoes, 94, and pastures 92 per cent. Preliminary reports from correspondents and threshermen indicate an average yield of 24 bushels per acre of winter wheat; spring wheat, 17; oats, 34; barley, 26; rye, 18. The average yield of hay is placed at 1.5 tons and wild hay at 1.3 tons. If these average yields are maintained by final reports the total yields for the state will be about as follows: winter wheat, 12,000,000 bushels; spring wheat, 6,200,000; oats, 163,000,000; barley, 9,500,000; rye, 1,200,000 bushels; tame hay, 3,900,000 tons; wild hay, 950,000 tons. A summary of the crop estimates on apples for August 1st, shows 83 per cent of the 1909 crop, which was according to the 1910 census, 6,746,668 bushels. These estimates will indicate a production of 5,600,000 bushels for the state for this year. The estimates are somewhat higher than on July 1st, though practically the same. Reports from certain sections indicate a heavy decrease in yield on account of dry weather. The unsprayed orchards are suffering most because of the reduced leaf surface due to the apple scab and insect enemies earlier in the season. Scabby apples are reported as stunted and at a standstill. Plums: estimates show a decline in plums from 65 per cent July 1st to 56 per cent August 1st. Grapes: This crop seems to have suffered no injury from weather conditions. The estimates indicate 91.5 per cent of a full crop, a decrease of only one-half of 1 per cent between July 1st and August 1st. The crop will be exceptionally clean on account of freedom from disease due to the dry weather. There are no insects reported as serious in any part of the state.

IOWA CROP REPORT, SEPTEMBER 1, 1913.

The following is a summary of reports from correspondents on September 1. The estimated condition of corn as compared with the average of past years on that date was placed at 78 per cent, but this does not give an accurate idea of the actual condition of the crop in all parts of the state. In many of the northern counties where showers have been frequent the crop is in a flourishing condition and is rated nearly up to or above the average of past years; the average for the three northern tiers of counties on September 1st was 95 per cent. In the central counties where the effects of the drought was more apparent, and the wind had blown much of the corn down, the average condition was placed at 82 per cent. In the southern district where the temperatures were excessive, and the drought severe during the whole month, the average was only 58 per cent, and this is too high for many localities. Corn is maturing rapidly, and with normal weather more than half of the crop will be safe from damage by frost by September 15th, and more than 90 per cent and probably nearly all of it by the end of September.

Potatoes.—The drought has been very damaging to potatoes; the average condition on September 1st being only 47 per cent for the state. This, however, may be improved in localities where the vines are still alive, if rain comes withn a week or two.

Three-fourths of the threshing has been done. The average yield of winter wheat is 24 bushels, spring wheat, 17; oats, 35; barley, 25; rye, 19; timothy seed, 4.1 bushels per acre. The acreage of timothy cut for seed is 67 per cent of the area cut last year.

The reports show that the state will produce this year 70 per cent of the 1909 apple crop. These estimates indicate a total yield for this year of 4,739,280 bushels. This is a decrease from the estimates of August 1st of 860,000 bushels. Estimates also show that only 58.9 per cent of this year's yield will be marketable or a total of 2,793,795 bushels of marketable apples for the state. This estimate is probably too high. The six leading apple producing counties of the state, Fremont, Mills, Pottawattamie, Harrison, Page and Taylor, report an estimated production of 932,835 bushels for 1913. These same counties produced 1,803,469 bushels in 1909. Of this year's crop only 55 per cent of 513,000 bushels is estimated as marketable.

Unless rains come soon these estimates will be greatly reduced in the next two weeks. Jonathan is standing the drought well, but Grimes Golden, Ben Davis and other leading commercial varieties are suffering for moisture.

FINAL REPORT FOR THE STATE—TOTAL YIELD OF SOIL PRODUCTS—VALUE AT FARM PRICE, DECEMBER 1, 1913.

Following is a summary of reports from crop correspondents of the Iowa Weather and Crop Service, showing the average yield per acre and total yields of staple soil products, and the average price at the nearest station, December 1, 1913.

In spite of many adverse conditions that prevailed during the season, Iowa has produced a full average crop of all soil products, except potatoes, and the value of the year's output is far in excess of any other year in the history of the state.

Corn.—The drought that prevailed over the southern half of the state reduced the yield of corn materially, but owing to the fact that timely and well distributed showers occurred in the northern counties, the state average is better than the normal. In Monroe County the average yield per acre was only 18 bushels while in many of the northern counties the average yield was more than 40 bushels per acre, making the average for the state 34.9 bushels. The total yield was 329,343,000 bushels and the total value at 59 cents per bushel is $194,311,370. The total yield is 92,025,000 bushels less than last year, but the total value exceeds that of last year by $12,612,756. The condition of the crop is fully up to if not better than the average and practically all of it is now in the cribs.

OATS. The area harvested was 4,824,400; average yield, 34.2 bushels per acre; total yield, 164,851,000; aggregate value at 34 cents per bushel, $56,049,340. Last year the average yield was 44.4 bushels per acre; total yield, 206,949,700 bushels; average price, 27 cents; total value, $55,876,419.

SPRING WHEAT.—Area harvested, 365,300 acres; average yield, 15.1 bushels per acre; total yield, 5,510,200 bushels; price per bushel, 75 cents; total value, $4,132,650.

WINTER WHEAT.—Area harvested, 505,740 acres; average yield per acre, 23.1 bushels; total yield, 11,693,900 bushels; average price, 77 cents per bushel; total value, $9,004,303.

BARLEY.—Average per acre, 23.8 bushels; total yield, 8,756,300 bushels; average price, 53 cents; total value, $4,640,839.

RYE.—Average yield, 18.3 bushels per acre; total crop, 1,274,500 bushels; farm price, 59 cents; total value, $751,955.

FLAX SEED.—Average per acre, 10.0 bushels; total product, 223,490 bushels; total value at $1.36 per bushel, $303,946.

POTATOES.—Average yield per acre, 47.3 bushels; total yield, 5,532,170 bushels; total value at 85 cents per bushel, $4,702,344.

HAY (TAME).—Average yield, 1.5 tons; total yield, 4,010,300 tons; average price, $9.93; total value, $39,822,279.

HAY (WILD).—Average yield, 1.3 tons; total yield, 910,205 tons; average price, $8.80 per ton; total value, $8,009,804.

TABULATED CROP SUMMARY.

	Average	Average Yield	Av'r'ge Price	Total Yield	Total Value
Corn	9,434,500	34.9 bu.	$ 0.59	329,343,000 bu.	$ 194,311,370
Oats	4,824,400	34.2 bu.	.34	164,851,000 bu.	56,049,340
Spring Wheat	365,300	15.1 bu.	.75	5,510,200 bu.	4,132,650
Winter Wheat	505,740	23.1 bu.	.77	11,693,900 bu.	9,004,303
Barley	368,600	23.8 bu.	.53	8,756,300 bu.	4,640,839
Rye	69,830	18.3 bu.	.59	1,274,500 bu.	751,955
Flax Seed	22,355	10.0 bu.	1.36	223,490 bu.	303,946
Potatoes	117,000	47.3 bu.	.85	5,532,170 bu.	4,702,344
Hay (Tame)	2,632,200	1.5 tons	9.93	4,010,300 tons	39,822,270
Hay (Wild)	727,165	1.3 tons	8.80	910,205 tons	8,009,894
Pasture and Grazing				Estimated	83,000,000
Alfalfa				Estimated	1,821,090
Ensilage				Estimated	2,156,000
Timothy Seed				Estimated	3,059,965
Clover Seed				Estimated	592,552
Sweet Corn				Estimated	700,000
Pop Corn				Estimated	385,000
Fruit Crop				Estimated	7,000,000
Garden Truck				Estimated	1,000,000
Miscellaneous Crops				Estimated	8,000,000
Total value					$ 429,443,437

The estimated value of soil products for 1912 was $ 392,420,668

FUNGUS DISEASES IN IOWA FOR THE YEAR 1913

BY L. H. PAMMEL AND CHARLOTTE M. KING.

For nearly a quarter of a century observations have been made here at Ames, on fungus diseases of plants. The notes thus gathered have been published at various times in reports of the State Horticultural Society, proceedings of the Society for the Promotion of Agricultural Science, the Iowa Academy of Science, etc. In volume 16 of the Iowa Academy* the data for a number of years was brought together. In the report of the Iowa State Horticultural Society** for 1912 weather maps were published to show the influence of temperature and moisture on the development of fungus diseases. It has been shown by Melhus*** that temperature has a marked influence on the germination of spores in white rusts. The effect of cloudy weather and precipitation during the month of April this year had a marked influence on the spread and infection of lettuce mildew (*Bremia*). The dry weather during the past season especially at the time when oats and wheat were heading out, checked the spread of grain rust. On the other hand, smut of oats will germinate under conditions favorable for the germination of oats. The record of oats smut in this state during the present season shows that the loss was not far from $6,000,000. This is a disease which can largely be prevented.

The growing season of 1913 started in with splendid prospects for a large crop of grain and fruit. The soil was in excellent condition, there was enough moisture to insure a good hay and grass crop. However, cold and wet weather when small grain was sown made the stand of oats very unequal. This was shown in the yield of oats in some fields where it was sown early, the yield was good but where the oats was sown during the cold, wet weather the straw was short with a low yield.

Mr. Chappel of the Iowa Weather and Crop Service reported on April 20th that "Nearly a full week of bright sunshine with practically no rain has started growth of all vegetation, put the ground in fairly good condition, and enabled farmers to do a great amount of field work." The bulk of the oats was in by the end of the week ending May 4th. This indicated that it was too cool for normal growth of the vegetation. There was a heavy frost on April 28th. The week ending May 11th showed cold and wet weather in many parts of the state. The week ending June 22d showed excessively high temperature and bright sunshine with showers in many parts of the state on Friday of that week. The crop indications on June 29th were: High temperatures, bright sunshine, the straw and heads of oats were short.

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*Proc. Ia. Acad. of Sci. 16:41. Contr. Bot. Dept., I. S. C. No. 41.
**Rept. Ia. State Hort. Soc. 47:189.
***Phytopathology, 2:197.

In regard to the prospects for fruit, Mr. Wesley Greene, of the State Horticultural Society, reported as follows, on May 7:

Apples, 93 per cent; pears, 90 per cent; American plums, 90 per cent; domestic plums, 75 per cent; Japanese plums, 80 per cent; cherries, 89 per cent; peaches, 79 per cent; red raspberries, 77 per cent; black raspberries, 88 per cent; blackberries, 89 per cent; currants, 94 per cent; gooseberries, 90 per cent; strawberries, 84 per cent of a full crop. The general average for all crops is 85.5 per cent, the highest since 1901 when it was 4.5 per cent higher.

In southern Iowa, a prolonged drouth lessened the yield of corn, although the small grain crop was good. Northern, and especially northeastern Iowa was more favored with rain and hence the crops were much better.

Rust of wheat, oats, apple scab and apple blight were more serious in northern and northeastern Iowa than in southern Iowa. Oats smut was common everywhere in the state, Mr. Burger reporting a loss of 13.5 per cent in Black Hawk county, a loss somewhat larger than in many other parts of the state. The loss probably is not far from 10 per cent in the state. Surely the farmers of Iowa should treat the oats seed with the formalin method before planting.

The money loss from various other fungus diseases is as great or greater than from oats smut. Some of the diseases are preventable and the loss can be very materially reduced by better methods of culture or the treatment with fungicides. Root diseases, like potato scab, blight of wheat, yellow leaf disease of barley, can only be prevented by the use of seed treatment and proper rotation of crops. The farmer and horticulturist should take heed of the lessons taught by the ravages of the fungus parasites of plants.

In order to show the influence precipitation has on the abundance of fungus diseases, the weather conditions are given for several localities in Iowa, namely Decorah, Ames, Council Bluffs and Keokuk, in the following tables:

TEMPERATURE AND PRECIPITATION FOR APRIL TO SEPTEMBER, 1913, AMES, IOWA.

	APRIL		MAY		JUNE		JULY		AUGUST		SEPT.	
	T.	P.	T.	P.	T.	P.	T.	P.	T.	P.	T.	P.
1	56	------	68	------	69	.25	73	------	73	------	85	------
2	65	.52	70	------	71	------	77	.34	74	------	84	------
3	55	.15	64	1.47	72	.08	76	------	77	------	83	------
4	41	.21	57	.20	66	------	82	------	69	------	85	------
5	43	------	56	.04	72	.01	78	------	75	------	84	------
6	40	------	49	------	76	.02	76	------	74	------	82	------
7	42	------	53	------	62	.10	79	------	77	.53	81	------
8	36	------	64	------	53	------	81	------	81	------	73	------
9	38	.15	50	.60	54	------	78	------	85	------	74	------
10	37	.50	49	------	56	------	69	------	82	.05	71	------
11	36	.12	52	------	59	------	69	1.20	73	.13	70	.92
12	40	------	65	------	62	------	72	------	76	------	57	------
13	46	------	63	.80	63	------	73	------	79	.24	58	------
14	53	------	55	2.02	72	------	73	------	84	------	60	------
15	57	------	56	.58	89	------	84	------	84	------	61	------
16	62	------	57	------	80	------	86	------	86	------	63	.14
17	62	------	58	------	80	------	83	------	88	------	67	------
18	62	------	53	------	75	------	77	------	80	------	62	------
19	45	------	52	.34	77	------	72	------	79	.10	63	.20
20	52	------	57	.85	79	.80	71	------	74	.67	59	------
21	60	------	55	.02	74	------	68	------	80	------	51	------
22	70	------	51	------	70	------	72	------	70	------	42	.13
23	67	------	56	------	69	------	72	.41	67	------	55	------
24	54	------	65	.20	77	.48	66	------	71	------	64	------
25	48	------	61	.37	77	------	70	------	75	------	47	------
26	45	------	60	.25	80	------	80	------	76	------	50	------
27	50	------	66	------	80	------	80	------	75	------	52	------
28	48	------	70	------	84	------	77	------	71	------	53	.43
29	57	------	76	------	84	------	87	------	69	------	61	------
30	61	------	75	------	82	------	86	------	70	------	60	------
31	------	------	72	------	------	------	79	------	81	------	------	------
Sums	------	1.65	------	7.74	------	1.74	------	1.95	------	2.72	------	1.82
Means	51.2	------	55.8	------	71.8	------	76.4	------	76.6	------	65.1	------

*In April for Ames the condition of the sky was as follows: Rainy days, 9; clear days, 12; partly cloudy days, 7; cloudy days, 11. Prevailing wind, south. The cloudy days occurred April 6–16. This was the lettuce mildew inspection period.

TEMPERATURE AND PRECIPITATION FOR APRIL TO SEPTEMBER, 1913, COUNCIL BLUFFS, IOWA.

	APRIL		MAY		JUNE		JULY		AUGUST		SEPT.	
	T.	P.	T.	P.	T.	P.	T.	P.	T.	P.	T.	P.
1	55	------	73	------	70	1.20	79	------	76	------	83	------
2	67	------	67	.03	69	------	82	------	72	------	85	.25
3	45	.10	55	1.16	68	.07	83	------	78	------	82	------
4	44	.09	55	------	67	.04	76	------	80	------	83	------
5	48	------	57	------	75	.02	73	.78	83	------	85	------
6	53	------	50	------	73	.13	75	1.00	75	------	83	------
7	45	.87	56	------	70	.12	80	------	83	------	84	------
8	38	.27	65	------	55	------	75	------	95	------	77	.26
9	39	.52	53	.45	58	------	75	------	------	------	75	------
10	36	.82	45	.09	62	------	68	------	------	------	77	1.55
11	40	.03	54	------	67	------	68	.13	77	.27	64	.05
12	42	------	64	------	71	------	72	------	80	------	61	------
13	45	------	70	.81	79	------	76	------	84	.75	60	------
14	52	------	64	------	82	------	88	------	85	------	64	------
15	59	------	54	.38	78	------	85	------	86	------	62	------
16	65	------	65	------	75	------	89	------	83	------	60	.33
17	61	------	62	.09	77	------	------	------	88	------	67	.20
18	58	------	54	------	74	------	73	------	84	------	62	------
19	52	------	62	.10	76	1.91	69	------	82	------	------	------
20	53	------	58	1.74	75	.43	69	------	87	.04	------	------
21	65	------	52	------	71	------	70	------	------	------	------	------
22	65	------	49	------	72	------	76	.05	66	------	------	------
23	60	.76	54	------	79	------	73	.34	66	------	------	------
24	45	.45	60	------	73	.80	67	------	72	------	62	1.74
25	41	------	66	.20	82	------	74	------	76	------	48	.26
26	47	------	52	.12	83	------	89	------	83	------	48	------
27	48	------	67	------	82	------	--	.06	86	------	55	------
28	52	------	77	------	81	------	82	.26	77	------	52	.27
29	57	------	81	------	76	.30	91	------	65	------	58	------
30	69	------	78	------	73	------	86	------	76	------	61	.55
31	------	------	75	------	------	------	74	------	79	------	------	------
Sums	------	3.91	------	5.37	------	5.01	------	2.62	------	1.06	------	5.46
Means	52	------	66.5	------	73.3	------	77.9	------	79	------	67.8	------

TEMPERATURE AND PRECIPITATION FOR APRIL TO SEPTEMBER, 1913, KEOKUK, IOWA.

	APRIL		MAY		JUNE		JULY		AUGUST		SEPT.	
	T.	P.	T.	P.	T.	P.	T.	P.	T.	P.	T.	P.
1	54	------	70	------	74	.01	77	.04	75	------	90	------
2	66	------	72	------	72	------	79	------	77	------	88	------
3	56	.68	67	.20	72	.09	82	------	83	------	89	------
4	42	.20	68	.64	69	------	83	------	77	------	83	------
5	41	.05	61	1.01	78	.03	82	------	76	------	83	------
6	42	------	58	------	60	------	77	------	79	------	81	------
7	39	.39	58	------	61	.65	79	------	86	------	84	------
8	37	1.29	62	------	54	------	79	------	90	.03	77	------
9	46	------	50	.09	58	------	72	------	90	------	73	------
10	49	------	40	------	63	------	73	------	82	------	73	------
11	39	------	51	.04	67	------	78	------	75	1.21	70	.05
12	39	------	65	------	73	------	83	------	78	------	65	------
13	45	------	68	.17	78	------	85	------	82	------	62	------
14	53	------	65	.02	84	------	87	------	82	------	64	------
15	54	------	61	.43	82	------	89	.03	88	------	62	.09
16	65	------	62	------	84	------	88	------	92	------	65	.27
17	64	------	61	.26	85	------	80	------	86	------	65	.04
18	63	.01	50	------	85	------	78	------	83	.13	66	------
19	53	------	57	.23	83	------	72	------	78	.26	66	.79
20	62	------	70	.35	76	------	73	------	82	------	54	.01
21	59	------	59	.01	66	------	76	------	81	------	48	------
22	70	------	52	------	77	1.36	75	------	69	------	45	------
23	68	------	57	------	78	------	72	.04	60	------	62	------
24	57	------	64	------	78	1.51	70	.01	67	------	72	------
25	50	------	68	------	83	.49	78	------	72	------	58	.02
26	51	------	60	.42	86	------	81	------	79	------	51	------
27	45	------	63	------	86	------	82	------	81	------	54	------
28	53	------	75	------	87	------	89	------	77	------	57	.13
29	56	------	77	------	85	------	89	------	65	------	65	.01
30	57	------	79	------	75	.01	83	------	74	------	63	.01
31	------	------	78	------	------	------	------	------	85	------	------	------
Sums	------	2.62	------	3.87	------	4.15	------	.12	------	1.63	------	1.42
Means	53	------	64	------	74.8	------	79.6	------	80.1	------	67.8	------

TEMPERATURE AND PRECIPITATION FOR APRIL TO SEPTEMBER, 1913, DECORAH, IOWA.

	APRIL		MAY		JUNE		JULY		AUGUST		SEPT.	
	T.	P.	T.	P.	T.	P.	T.	P.	T.	P.	T.	P.
1	46	.52	65	------	------	------	------	.03	72	------	84	------
2	49	------	66	------	------	------	------	.02	76	------	85	------
3	43	.15	65	.35	------	------	------	------	79	------	82	------
4	35	.23	48	.85	------	------	------	------	74	------	80	------
5	39	------	53	------	------	.05	------	1.00	71	------	83	------
6	42	------	52	------	------	.85	------	------	78	------	83	------
7	41	.34	49	.04	------	------	------	------	66	------	82	------
8	41	.30	51	.54	------	------	------	.53	76	.15	75	------
9	37	.32	50	------	------	------	------	------	76	------	67	------
10	33	.30	50	------	------	------	------	------	71	.75	74	------
11	37	.06	52	------	------	------	------	1.45	69	------	68	.50
12	45	------	53	------	------	------	------	------	74	.11	60	------
13	45	------	69	.93	------	------	------	------	79	.09	58	------
14	54	------	58	.66	------	------	------	------	81	------	63	------
15	56	------	54	.22	------	------	------	------	82	------	62	------
16	60	------	55	------	------	------	------	------	87	------	65	.20
17	65	------	64	------	------	------	------	------	85	------	64	------
18	59	------	67	------	------	------	------	.32	80	.18	60	------
19	47	------	69	.66	------	------	------	------	81	------	65	.62
20	49	------	57	.98	------	.50	------	------	82	------	52	.46
21	59	------	53	------	------	------	------	------	80	------	46	------
22	67	------	54	.03	------	------	------	------	70	------	44	------
23	69	------	51	------	------	------	------	.95	66	------	52	.22
24	63	.01	56	------	------	.28	------	------	72	------	62	------
25	57	------	61	.03	------	.12	------	------	76	------	54	.20
26	38	------	60	------	------	------	------	------	72	------	49	------
27	45	------	59	.38	------	------	------	------	69	------	55	------
28	55	------	69	------	------	------	------	.15	75	------	56	------
29	49	------	79	------	------	------	------	------	63	------	64	------
30	60	------	81	------	------	------	------	------	69	------	59	1.30
31	------	------	65	------	------	------	------	.22	74	------	------	------
Sums	------	2.19	------	5.67	------	1.80	------	4.67	------	1.28	------	3.50
Means	49.6	------	59.8	------	------	------	------	------	75.5	------	65.1	------

A summary of the diseases for the season of 1913, is as follows:

The bitter rot, some reported from southwestern and central Iowa. It is not, however, as common as the Illinois canker (*Nummularia discreta*) which is abundant in southern and southwestern Iowa, reported frequently on the Ben Davis apple. Apple blotch (*Phyllosticta solitaria*) though reported chiefly from southwestern Iowa, is common wherever the Northwest Greening is cultivated. Little complaint was made of the powdery mildew (*Podosphdera leucotricha*). Apple scab (*Venturia inaequalis*) was abundant in many parts of the state, especially on leaves early in the season, though less in southern Iowa. Fruit was less scabby this year than in seasons of greater moisture. Apple blight (*Bacillus amylovorus*) was common in many parts of the state, though less than in some seasons. Reported from various sections of the state by Prof. Herrick on the Transcendent, Yellow Transparent, Wolf River, Tallman. Apple rust reported on Wealthy, Jonathan, Ben Davis, Iowa Blush. The Grimes Golden, though in proximity of infected red cedar, did not show the disease according to Prof. Herrick at Red Oak. The period of infection from the red cedar fungus was shorter than usual; some seasons it extends over a period of a month. The gelatinous spore masses may become dry and on becoming moistened the spores again germinate.

Crown gall on blackberry was reported as serious in Scott county by Mr. Bliss. It was also reported as serious on the apple in Page county.

Pear blight occurred in some sections of the state. In Story county there was much of the spot disease (*Entomosporium maculatum*) on the leaves. Mr. J. P. Anderson reports considerable of *Septoria pyrina* in Decatur county.

Rust of blackberry (*Gymnoconia Peckiana*) was reported as troublesome in blackberry patches in several counties, probably widely distributed in the state. The custom of digging up the diseased plants has done much to lessen the disease.

Cherry spot (*Cylindrosporium padi*) occurred in central Iowa and probably quite general in the state, most serious to nursery trees. It was not common as during wet years.

Mildew (*Podosphaera oxyacanthae*) was widely distributed in the state though not as abundant as in 1912. There was also much mildew (*Microsphaera alni*) on the lilac, some on the oak. There was much complaint of rose mildew (*Sphaerotheca pannosa*) on the Crimson Rambler. The mildew on wheat (*Erysiphe graminis*) was not as abundant as in 1912. The mildew on grape (*Uncinula necator*) was not as common as in 1912. It was much more abundant on the Virginia creeper.

Red currants were attacked by *Cercospora angulata* but not as serious as in 1912.

The downy mildews were not abundant this year, the grape was notably free or nearly so except in northern Iowa. The lettuce mildew (*Bremia Lactucae*) was abundant in greenhouses (Nevada) early in April during the cloudy and misty weather, April 10-20. A few days of sunshine checked the spread of the disease. There was less of the peppergrass mildew (*Peronospora parasitica*) this spring than in 1912.

There was comparatively little of *Sclerospora graminicola* on millet. Potato blight (*Phytopthora infestans*) was not observed. It was reported from Scott county. Its presence there is doubtful. Its occurrence in the state seems doubtful.

In September after the rains there was some white rust (*Cystopus candidus*) on the radish. Gooseberry rust (*Aecidium Grossulariae*) was abundant on cultivated gooseberries in Fayette county and common on wild gooseberries in many parts of the state.

The black knot of the plum (*Plowrightia morbosa*) is common wherever the European Damson's plums are cultivated; it was common on wild plums of *Prunus Americana* in Winnebago county (Bakke), and Allamakee and Clayton counties (Pammel). Plum pocket (*Exoascus Pruni*) was abundant on *Prunus Americana* in Allamakee, Fayette, and Clayton counties. The *Exoascus communis* produces swollen branches on the Miner plum, reported only from a few places (Boone county), but probably widely distributed in the state.

Brown rot (*Sclerotinia fructigena*) was far less common this year than in 1912. Some occurred on the peach, plum, and apple and early during the season some reported on the cherry and young branches of Crataegus.

Raspberry anthracnose (*Gloeosporium venetum*) was reported from different localities in the state.

The sycamore blight (*Gloeosporium nervisequum*) was reported from many counties where the sycamore is native. This disease manifested itself by the dying of the young shoots giving to the trees the appearance of having been nipped by frost. The disease appeared after a wet cold spell followed by warm weather.

Some early blight (*Macrosporium Solani*) was reported from central Iowa, Scott and Muscatine counties. The dying of young potato shoots in the field was reported from Scott and Muscatine counties. The shoots contained *Fusarium sp.*

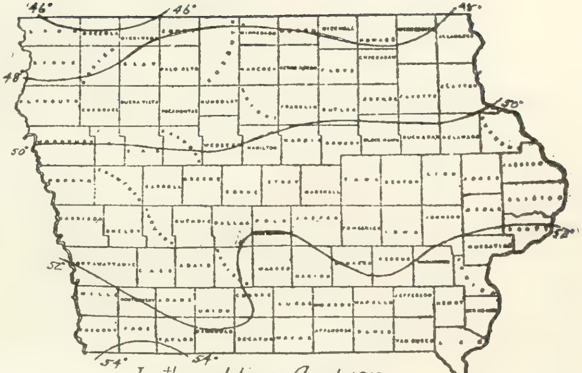
Of the diseases of grain attention may be called to the presence of *Puccinia graminis* on the leaf sheaths of wheat, and oats, but not so destructive as in wet years. The *Puccinia rubigovera* was somewhat more destructive in leaves of wheat. There was also some *P. coronata* on oat leaves and some corn rust (*Puccinia sorghi*) on sweet and field corn, and some *P. graminis* on red top and some *P. phlei-pratensis* on timothy.

There was also some clover rust (*Uromyces Trifolii*) on red clover and late in the season some alfalfa rust (*Uromyces stritus*) on alfalfa though not as abundant as in 1911 and 1912.

The leaf spot of alfalfa (*Phacidium medicaginis*) was abundant wherever alfalfa is grown. Reported as abundant in Scott, Story, Harrison, and Pottawattamie counties in Iowa.

There was much silvertop (*Sporotrichum sp.*) in Fayette, Allamakee, Clayton and Bremer counties, in some cases as much as 40 per cent of the "seed stalks" were killed. On an average of 25 per cent of the stalks were diseased. There was, however, little of the disease in central and southern Iowa.

In regard to the diseases of forest trees in addition to the sycamore blight mentioned above, the box elder, especially in wounds, there was much of *Pleuroibs ulmarius* in Story, Marion, and Buena Vista counties. The usual amount of *Melampsora salicis* and *Phyllachora ulmi* occurred There was much of *Marsonia juglandis* on the black walnut in central and northern Iowa.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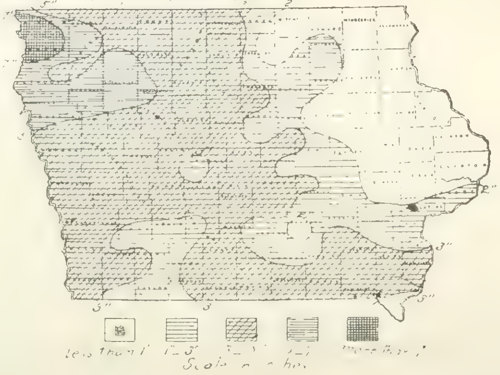
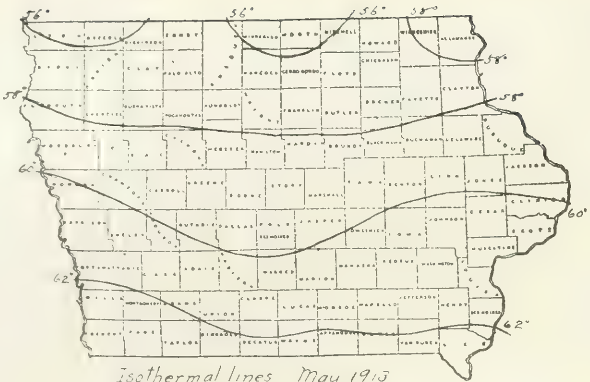
46°
48°
48°
50°
50°
52°
52°
54°
54°

Isothermal lines. April. 1913

Rainfall for April 1913


5"
2
2"
3"
5"
3"
3
less than 1"
1"–3"
more than
Scale in inches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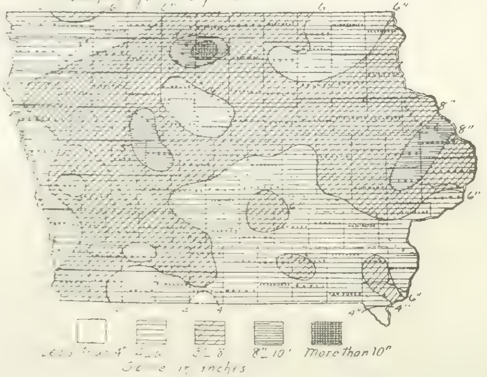
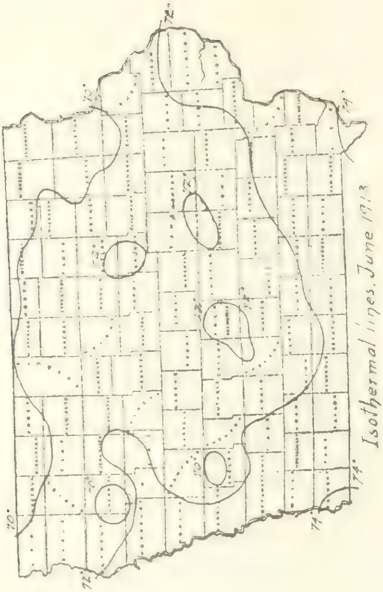
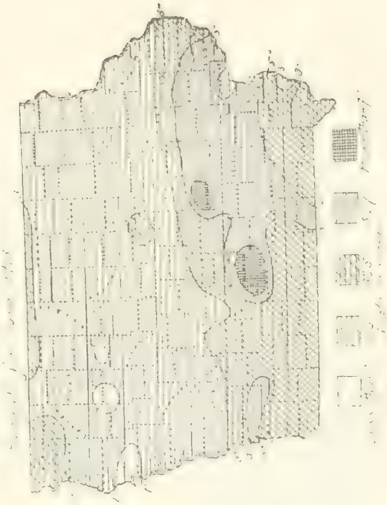
56°
58°
58°
58°
58°
60°
60°
62°
62°

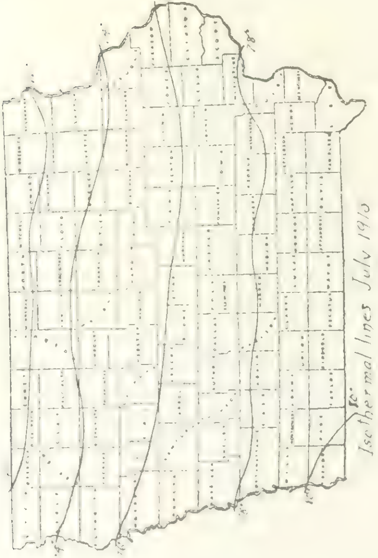
Isothermal lines May, 1913

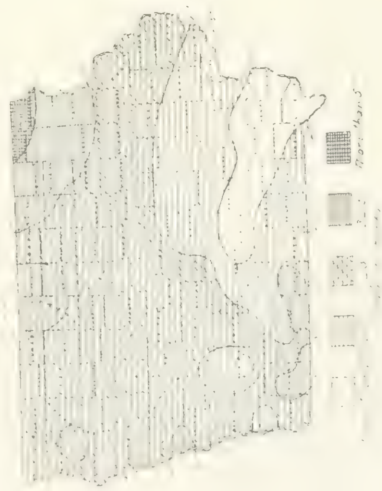
Rainfall for May 1913

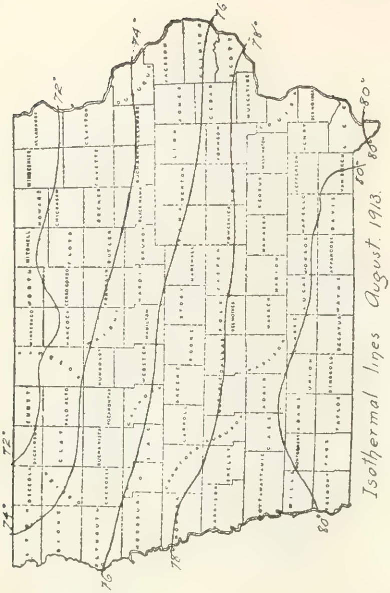

6"
6"
8"
8"
6"
6"
4"
4"
4
Less than 4"
4"–6"
6"–8"
8"–10"
More than 10"
Scale in inches


Isothermal lines. June 1913
72°
70°
74°
71°

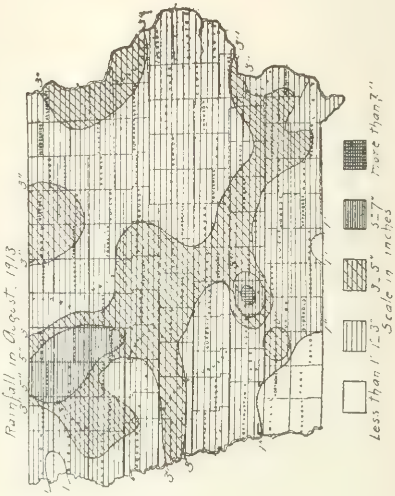



Isothermal lines July 1913
78°
80°

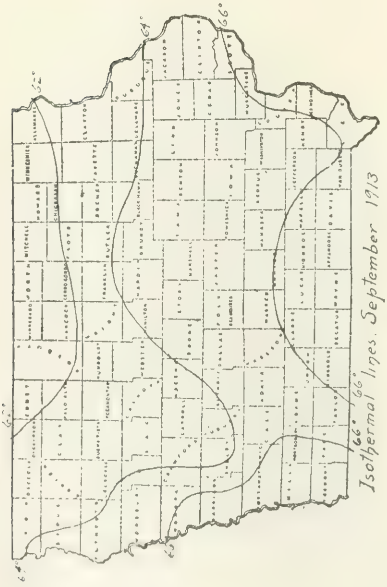



72°
74°
76°
78°
80°

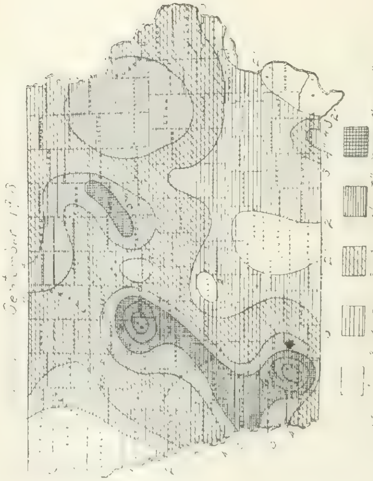
Isothermal lines August. 1913.


1"
3"
5"
Less than 1"
1–3"
3–5"
5–7"
more than 7"
Scale in inches

Rainfall in August. 1913



Isothermal lines. September 1913


2"
3"
4"
5"
3–4
4–5"
more than 5"
Scale in inches

September 1913

IOWA CROPS, 1913, NUMBER OF ACRES BY COUNTIES.

	Corn Acres	Oats Acres	Spring Wheat Acres	Winter Wheat Acres	Barley Acres	Rye Acres	Flax Acres	Potatoes Acres	Tame Hay Acres	Wild Hay Acres	Alfalfa Acres	Pastures Acres
Adair	101,500	84,500	4,100	3,000	1,500	300	----------	1,200	33,400	3,300	40	116,000
Adams	72,000	[illegible]1,800	640	11,200	590	540	----------	300	26,000	1,500	130	89,000
Allamakee	40,000	35,000	1,100	1,000	14,700	1,110	30	1,000	46,500	1,500	60	161,000
Appanoose	43,500	18,000	200	3,000	----------	290	----------	200	25,600	1,300	----------	98,000
Audubon	94,500	42,100	5,850	1,000	5,900	70	----------	1,000	24,800	2,600	100	72,400
Benton	129,200	77,000	830	570	12,700	1,090	----------	1,000	37,000	4,000	20	100,700
Black Hawk	99,000	59,000	270	1,700	6,200	2,300	----------	2,500	28,400	9,500	70	96,900
Boone	114,000	60,000	1,800	2,800	300	130	30	1,500	23,300	12,800	80	75,600
Bremer	63,000	51,300	350	320	2,200	1,300	25	1,250	17,000	19,400	30	65,200
Buchanan	88,100	58,000	240	420	390	1,080	----------	900	33,300	12,600	20	106,700
Buena Vista	115,000	82,500	1,140	600	1,030	----------	260	1,800	18,200	16,600	140	61,300
Butler	104,000	85,000	500	830	1,400	2,900	----------	1,500	22,500	10,500	15	89,000
Calhoun	138,500	92,500	500	1,100	1,100	40	115	1,100	18,600	11,200	80	57,400
Carroll	108,000	65,900	6,400	1,200	3,400	100	----------	2,600	23,500	9,900	80	69,600
Cass	110,000	37,600	7,800	17,000	2,500	250	35	1,250	33,200	1,980	230	95,000
Cedar	100,500	54,400	590	2,400	14,200	970	----------	1,100	41,600	330	40	96,000
Cerro Gordo	93,000	73,200	1,300	630	3,200	550	600	1,200	20,900	14,400	60	66,700
Cherokee	123,000	76,000	900	300	3,390	70	75	1,400	25,000	10,800	600	83,400
Chickasaw	50,200	46,900	1,930	330	4,100	700	400	1,000	18,500	11,000	----------	66,900
Clarke	54,000	19,600	300	7,500	60	70	----------	250	17,700	120	----------	89,600
Clay	97,500	75,400	2,900	450	2,970	350	1,240	900	19,400	19,100	40	81,000
Clayton	69,000	55,000	660	1,700	14,400	1,950	----------	1,850	55,400	1,530	40	158,000
Clinton	118,000	43,600	1,150	5,300	9,200	1,870	----------	1,050	54,000	4,300	20	142,400
Crawford	133,500	62,000	14,000	2,800	5,300	280	----------	2,050	40,000	6,200	800	98,000
Dallas	128,500	53,200	1,650	10,000	850	350	----------	750	25,000	4,800	180	91,000
Davis	56,500	28,900	50	2,200	----------	300	----------	450	34,600	60	20	106,800
Decatur	67,000	20,200	160	10,000	----------	550	----------	200	30,000	450	60	96,000
Delaware	86,300	45,000	240	200	8,580	2,050	----------	1,150	36,500	6,800	----------	114,500
Des Moines	66,500	29,000	260	1,500	420	850	----------	700	22,600	200	50	80,900
Dickinson	56,500	33,400	5,400	250	2,630	240	850	500	7,700	14,600	45	44,000
Dubuque	67,000	50,300	600	370	2,540	900	----------	2,100	51,800	700	50	146,000
Emmet	52,300	38,000	5,500	230	2,890	210	1,100	750	12,500	14,000	----------	45,400
Fayette	90,000	69,400	900	700	8,000	1,900	90	1,800	47,000	12,000	20	156,000
Floyd	79,000	70,200	1,500	680	2,100	2,150	440	1,700	23,000	4,500	----------	55,000
Franklin	110,000	84,900	1,200	750	1,400	150	260	1,600	23,700	14,000	50	81,000
Fremont	96,900	11,800	1,600	31,400	100	1,100	----------	550	10,700	5,600	4,500	68,000
Greene	124,000	65,000	980	1,150	770	100	40	800	23,600	9,600	40	75,600
Grundy	104,600	48,200	400	800	6,000	100	----------	2,800	21,200	7,300	25	66,100

IOWA CROPS, 1913. NUMBER OF ACRES BY COUNTIES—CONTINUED.

	Corn Acres	Oats Acres	Spring Wheat Acres	Winter Wheat Acres	Barley Acres	Rye Acres	Flax Acres	Potatoes Acres	Tame Hay Acres	Wild Hay Acres	Alfalfa Acres	Pastures Acres
Pottawattamie	198,000	44,200	14,800	28,000	3,500	780	----------	2,450	33,700	9,100	9,400	129,000
Poweshiek	116,000	49,100	1,800	1,400	1,400	400	----------	1,100	29,200	400	40	104,300
Ringgold	74,700	23,500	200	8,800	20	260	----------	150	36,000	330	10	100,000
Sac	114,000	69,500	1,450	640	5,500	90	70	1,200	26,000	8,800	270	75,000
Scott	74,100	25,000	1,640	5,530	24,300	3,200	----------	6,000	28,000	3,040	100	74,200
Shelby	132,600	47,200	11,600	1,500	8,700	440	----------	1,300	27,400	5,700	560	84,000
Sioux	170,000	84,200	29,700	1,600	18,500	40	140	1,900	17,800	19,100	700	76,100
Story	124,000	60,300	700	4,200	160	270	50	500	28,500	7,100	140	64,000
Guthrie	99,000	49,000	3,400	2,500	1,200	70	----------	1,300	23,300	4,600	50	111,600
Hamilton	117,500	77,600	720	1,700	300	100	250	800	24,800	12,700	60	75,600
Hancock	93,000	72,200	5,200	400	500	500	770	1,850	17,300	27,700	15	70,200
Hardin	104,000	69,000	1,800	950	850	160	----------	1,250	23,500	10,200	70	72,800
Harrison	154,500	20,200	19,200	21,000	2,100	360	----------	830	10,000	9,000	6,500	79,000
Henry	66,000	33,000	90	900	70	650	----------	350	21,800	----------	30	80,700
Howard	50,100	49,300	2,100	1,300	9,600	1,250	1,500	900	28,000	8,700	----------	68,000
Humboldt	82,000	59,600	4,100	690	1,350	100	500	650	16,600	12,600	50	48,000
Ida	94,000	46,600	2,500	520	7,500	260	----------	900	22,100	2,600	100	53,600
Iowa	96,000	44,000	1,030	1,730	1,240	670	----------	1,350	29,200	1,280	45	109,000
Jackson	62,000	30,400	1,100	1,060	2,900	2,400	----------	1,200	36,800	1,240	20	162,000
Jasper	138,400	56,100	5,000	7,000	400	340	----------	1,100	39,200	1,260	25	136,600
Jefferson	57,000	26,200	430	2,160	380	500	----------	440	24,400	----------	20	81,000
Johnson	86,800	41,700	700	3,200	1,470	1,800	----------	1,100	41,300	1,000	50	103,000
Jones	76,800	34,100	460	350	7,400	1,280	----------	820	42,800	450	20	117,400
Keokuk	97,800	39,400	2,100	3,130	540	690	----------	800	38,500	160	15	114,000
Kossuth	157,300	117,800	12,500	650	6,400	400	1,450	3,000	27,300	53,500	25	112,500
Lee	60,600	22,800	150	3,250	380	3,200	----------	1,100	31,200	200	40	118,000
Linn	95,800	61,000	1,550	800	2,300	1,160	----------	1,580	48,000	3,800	30	126,000
Louisa	64,000	21,800	150	1,900	260	1,330	----------	400	15,400	720	110	64,000
Lucas	48,800	21,000	700	8,800	----------	430	----------	200	14,700	350	30	88,200
Lyon	119,000	84,600	9,200	280	11,100	230	120	2,300	1,200	11,500	380	56,200
Madison	105,200	26,500	1,700	9,200	1,740	440	----------	800	28,000	1,220	50	108,300
Mahaska	157,600	38,000	2,200	5,900	750	800	----------	690	29,300	500	50	94,800
Marion	86,600	2,700	3,100	17,200	650	760	----------	550	25,300	370	15	116,900
Marshall	117,500	74,500	1,820	6,500	780	200	----------	1,580	31,100	1,150	30	80,600
Mills	84,000	15,900	2,460	21,000	450	500	----------	400	11,300	3,900	4,500	59,000
Mitchell	61,500	75,000	3,700	550	8,300	260	2,400	1,800	20,600	2,300	10	64,000
Monona	142,000	20,000	12,100	27,500	2,000	270	----------	1,000	10,400	16,400	10,000	85,000
Monroe	51,000	19,300	2,900	6,800	40	400	----------	250	26,000	110	----------	92,900

Montgomery	84,000	16,400	4,040	27,700	370	430	----------	550	22,600	800	1,000	74,100
Muscatine	71,800	21,800	610	3,450	6,800	3,000	----------	2,450	24,200	900	50	100,000
O'Brien	113,000	74,500	3,640	310	12,600	200	200	1,800	20,100	9,000	80	72,100
Osceola	73,600	61,000	3,600	270	8,350	320	750	980	9,500	11,300	----------	43,900
Page	103,500	19,200	2,630	32,000	300	930	----------	450	30,000	1,000	320	99,800
Palo Alto	89,500	60,100	3,300	200	1,650	400	1,100	800	10,800	31,200	15	57,060
Plymouth	188,000	77,300	39,200	3,000	6,500	90	110	3,650	24,100	21,100	2,500	89,400
Pocahontas	118,000	90,300	1,600	850	1,000	290	920	1,200	14,300	21,200	50	60,600
Polk	97,000	35,500	3,600	20,000	140	270	----------	1,350	22,800	3,500	100	71,600
Tama	125,000	68,400	3,300	2,100	10,500	500	40	1,800	38,840	3,060	50	116,000
Taylor	72,000	19,000	250	18,300	390	700	----------	450	29,200	670	120	95,100
Union	62,000	22,000	750	2,800	120	290	----------	700	24,500	1,050	15	94,100
Van Buren	55,000	20,300	80	2,000	70	660	----------	230	31,400	50	160	125,000
Wapello	54,800	18,300	580	8,500	200	1,050	----------	650	26,000	----------	15	88,000
Warren	83,700	20,000	1,300	24,200	280	1,000	----------	700	30,200	650	40	126,000
Washington	97,700	48,400	560	2,260	290	460	----------	530	32,500	95	----------	102,000
Wayne	68,000	29,600	60	4,300	60	600	----------	200	37,500	80	----------	98,000
Webster	134,000	97,600	3,500	1,400	360	60	390	900	22,300	23,000	70	87,000
Winnebago	59,300	35,600	16,100	60	4,600	120	1,400	970	12,700	26,800	65	54,400
Winneshiek	71,000	61,300	7,500	1,100	21,400	1,860	1,160	1,300	46,500	4,800	45	130,000
Woodbury	185,000	52,000	12,000	12,200	3,850	160	50	1,500	22,000	13,000	5,400	97,500
Worth	51,200	47,500	12,000	320	5,230	230	3,000	1,300	15,300	17,900	80	54,000
Wright	105,400	82,400	2,500	450	1,500	60	225	900	25,200	11,800	20	66,600
Totals	9,434,500	4,804,400	365,300	505,740	368,600	69,830	22,255	117,000	2,632,200	727,165	51,490	8,922,600

FINAL CROP REPORT, 1913

AVERAGE YIELD PER ACRE AND TOTAL PRODUCT—BY COUNTIES

Counties	Corn		Oats		Spring Wheat		Winter Wheat		Barley		Rye		Flax Seed		Potatoes		Hay—Tame		Hay—Wild	
	Bushels per acre	Total Bushels	Bushels per acre	Total Bushels	Bushels per acre	Total Bushels	Bushels per acre	Total Bushels	Bushels per acre	Total Bushels	Bushels per acre	Total Bushels	Bushels per acre	Total Bushels	Bushels per acre	Total Bushels	Tons per acre	Total Tons	Tons per acre	Total Tons
Adair	30	3,045,000	36	1,242,000	16	75,600	23	69,000	28	42,000	17	5,100	----	----------	30	36,000	1.3	43,400	1.6	5,200
Adams	25	1,800,000	36	785,000	17	10,800	24	268,800	30	17,700	21	11,300	----	----------	23	6,900	1.5	39,000	1.3	1,900
Allamakee	44	1.760.000	39	1,365.000	20	22,000	23	23,000	26	382,200	17	19,300	5	150	70	70.000	1.8	83.700	2.0	3,000
Appanoose	24	1,044,000	40	720,000	19	3.800	22	66,000	----	----------	20	5,800	----	----------	34	6,800	1.2	30,700	1.3	1,700
Audubon	30	2,835,000	38	1,599,000	17	99,400	29	29,000	25	147,500	18	1,200	----	----------	60	60,000	1.5	37,200	1.8	4,600
Benton	39	5,038,000	34	2,618,000	17	7,100	21	11,900	23	292,100	23	25,000	----	----------	42	42,000	1.9	70,300	1.6	6,400
Black Hawk	38	3,762,000	36	2,124,000	18	4,800	26	44,200	29	179,800	19	43,700	----	----------	45	112,500	1.5	42,600	1.1	10,400
Boone	38	4,332,000	33	1,980,000	18	32,400	24	67,200	24	7,200	15	1,900	9	270	32	48,000	1.9	44,200	1.4	17,900
Bremer	37	2,331,000	36	1,846,000	17	5,900	21	7,600	26	57,200	20	26,000	8	200	48	60,000	1.7	28,900	1.2	23,200
Buchanan	36	3,172,000	34	1,972,000	19	4,500	20	8,400	28	10,900	20	21,600	----	----------	61	54,900	1.5	49,900	1.5	18,900
Buena Vista	37	4,255,000	30	2,475,000	14	15,900	24	14,400	24	24,700	----	----------	10	2,600	37	66,600	1.5	27,300	1.3	21,500
Butler	36	3,744,000	29	2,465,000	13	6,500	16	13,200	22	30,800	17	49,300	----	----------	54	81,000	1.8	40,500	1.4	14,700
Calhoun	39	5,400,000	33	3,052,000	20	10,000	22	24,200	25	27,500	18	700	9	1,000	29	31,900	1.6	29,700	1.0	11,200
Carroll	37	3,996,000	34	2,240,000	17	108,800	24	28,800	27	91,800	17	1,700	----	----------	57	148,200	1.6	37,600	1.2	11,800
Cass	29	3,190,000	35	1,316,000	17	132,600	25	425,000	30	75,000	15	3,700	7	240	19	23,700	1.3	43,100	1.3	2,500
Cedar	37	3,718,000	36	1,958,000	18	10,600	20	48,000	26	369,200	15	14,500	----	----------	57	62,700	1.9	79,000	1.5	500
Cerro Gordo	43	3,999,000	38	2,781,000	15	19,500	22	13,800	22	70,400	12	6,600	10	6,000	56	67,200	1.4	29,200	1.1	15,800
Cherokee	34	4,182,000	30	2,280,000	18	16,200	23	6,900	18	61,000	16	1,100	10	750	37	51,800	1.9	35,000	1.1	11,800
Chickasaw	44	2,208,000	32	1,500,000	17	32,800	18	5,900	27	110,700	19	13,300	10	4,000	43	43,000	1.4	25,900	1.3	14,300
Clarke	24	1,296,000	31	607,000	16	4,800	20	150,000	25	1,500	19	1,300	----	----------	43	19,700	1.1	19,400	1.0	120
Clay	46	4,192,000	38	2,865,000	15	23,500	17	7,600	26	77,200	19	6,600	8	9,900	55	49,500	1.3	25,200	1.0	19,100
Clayton	44	3,036,000	35	1,925,000	18	11,800	20	31,000	26	374,000	20	39,000	----	----------	58	107,300	1.7	94,100	1.3	2,000
Clinton	34	4,012,000	28	1,220,000	15	17,200	16	84,800	22	202,000	15	28,000	----	----------	39	40,900	1.3	70,200	1.1	4,700
Crawford	37	4,939,000	35	2,170,000	14	196,000	21	58,800	25	132,000	16	4,400	----	----------	55	112,700	1.5	60,000	1.0	6,200
Dallas	34	4,369,000	38	2,021,000	20	33,000	24	240,000	30	25,500	22	7,700	----	----------	31	23,200	1.5	37,500	1.1	5,200
Davis	24	1,356,000	33	954,000	13	600	20	44,000	----	----------	15	4,500	----	----------	38	17,100	1.4	48,400	1.0	10
Decatur	27	1,809,000	35	707,000	20	3,000	20	200,000	----	----------	17	9,300	----	----------	29	5,800	1.2	36,000	1.5	670
Delaware	33	2,847,000	30	1,350,000	17	4,000	16	3,200	26	123,000	17	34,800	----	----------	73	60,900	1.5	54,700	1.7	11,500
Des Moines	28	1,862,000	31	899,000	15	3,900	20	20,000	23	9,600	17	14,400	----	----------	63	44,100	1.4	31,600	1.1	220
Dickinson	39	2,203,000	36	1,202,000	12	64,800	18	4,500	24	63,000	17	4,000	11	9,300	63	31,500	1.3	10,000	1.1	16,000
Dubuque	37	2,479,000	32	1,609,000	19	11,400	20	7,400	30	76,000	16	14,400	----	----------	62	130,200	1.3	67,300	0.8	560

Emmet	38	1,987,000	37	1,466,000	13	71,500	20	4,600	21	60,600	12	2,500	9	9,900	65	48,700	1.6	20,000	1.1	15,400
Fayette	41	3,690,000	35	2,429,000	18	16,200	21	14,700	28	224,000	22	41,800	11	900	55	99,000	1.5	70,500	1.1	13,700
Floyd	36	2,844,000	29	2,035,000	19	28,500	22	14,900	26	54,600	16	34,400	9	3,960	46	78,200	1.3	29,900	1.0	4,500
Franklin	42	4,620,000	38	3,226,000	18	21,600	23	17,200	23	32,200	17	2,500	10	2,600	52	83,200	1.5	35,000	1.2	16,800
Fremont	25	2,322,000	31	366,000	17	27,200	24	753,600	29	2,900	21	23,000	----	----------	57	31,300	1.4	15,000	1.3	7,200
Greene	39	4,836,000	38	2,470,000	21	20,500	25	28,700	27	20,700	20	2,000	----	----------	32	25,000	1.4	33,000	1.1	10,500
Grundy	43	4,497,000	40	1,928,000	16	6,400	19	15,200	25	150,000	20	2,000	----	----------	53	148,400	1.5	31,800	1.1	8,000
Guthrie	31	3,069,000	31	1,519,000	16	54,400	25	62,500	27	32,400	16	1,100	----	----------	35	45,500	1.9	44,200	1.4	6,400
Hamilton	43	5,052,000	34	2,678,000	16	11,500	18	30,600	26	7,800	18	1,800	9	2,250	39	31,200	1.6	39,600	1.0	12,700
Hancock	41	3,813,000	33	2,382,000	17	88,400	20	8,000	27	13,500	23	11,500	10	7,700	70	129,500	1.5	25,900	1.3	36,000
Hardin	43	4,472,000	36	2,484,000	14	25,200	19	18,000	26	22,100	19	1,900	----	----------	34	42,500	1.8	42,300	1.0	10,200
Harrison	31	4,789,000	36	727,000	15	288,000	22	462,000	28	58,800	22	7,900	----	----------	45	37,300	1.8	18,000	1.9	17,100
Henry	28	1,848,000	29	957,000	17	1,500	21	18,900	24	1,600	17	9,300	----	----------	60	21,000	1.7	37,000	----	----------
Howard	41	2,054,000	34	1,676,000	18	37,800	18	23,400	26	249,600	15	19,200	12	18,000	70	63,000	1.5	42,000	1.2	10,400
Humboldt	41	3,362,000	35	2,086,000	17	69,700	23	15,800	22	29,700	17	1,700	10	5,000	57	37,000	1.6	26,500	1.1	13,800
Ida	38	3,572,000	32	1,491,000	15	42,000	20	10,400	24	180,000	21	5,400	----	----------	35	31,500	1.4	30,900	1.1	2,800
Iowa	33	3,168,000	33	1,452,000	19	19,500	22	38,000	30	37,200	22	14,700	----	----------	41	55,300	1.6	46,700	1.3	1,600
Jackson	40	2,480,000	28	851,000	19	20,900	20	21,200	27	78,300	20	48,000	----	----------	60	72,000	1.6	58,800	1.5	1,800
Jasper	34	4,705,000	36	2,019,000	15	75,000	21	147,000	30	12,000	17	5,700	----	----------	32	35,200	1.6	62,700	1.2	1,500
Jefferson	28	1,586,000	30	786,000	16	6,800	17	36,700	20	7,600	12	6,000	----	----------	65	28,600	1.4	34,100	----	----------
Johnson	30	2,604,000	30	1,245,000	14	10,600	21	67,200	24	35,200	16	28,800	----	----------	45	49,500	1.6	66,000	0.5	500
Jones	40	3,072,000	33	1,125,000	15	6,900	15	5,200	25	185,000	14	17,900	----	----------	56	45,900	1.5	64,200	1.2	540
Keokuk	29	2,876,000	31	1,311,000	18	37,800	23	72,000	22	11,800	20	13,800	----	----------	37	29,600	1.7	65,400	1.3	200
Kossuth	40	6,080,000	37	4,358,000	12	150,000	18	11,700	20	128,000	18	7,200	6	8,700	40	120,000	1.8	49,100	1.1	58,800
Lee	27	1,636,000	29	661,000	15	2,200	19	61,700	12	4,500	17	54,400	----	----------	53	58,300	1.3	40,500	1.0	200
Linn	34	3,257,000	34	2,074,000	19	29,400	12	9,600	28	64,400	22	25,500	----	----------	55	86,900	1.2	57,600	1.0	3,800
Louisa	30	1,920,000	28	610,000	19	2,800	21	39,900	24	6,200	20	26,600	----	----------	39	15,600	1.6	24,600	1.0	720
Lucas	26	1,268,000	40	840,000	15	10,500	22	193,600	----	----------	18	7,700	----	----------	42	8,400	1.5	22,000	1.2	420
Lyon	44	5,236,000	47	3,976,000	17	156,400	18	5,000	24	266,400	18	4,100	12	1,400	70	91,000	1.3	1,500	1.6	18,400
Madison	29	3,050,000	33	874,000	15	25,500	25	230,000	24	41,700	21	9,200	----	----------	47	37,600	1.5	42,000	1.2	1,400
Mahaska	28	4,412,000	33	1,254,000	16	35,200	22	129,800	29	21,700	18	14,400	----	----------	31	21,300	1.5	43,900	1.2	600
Marion	28	2,424,000	26	817,000	17	52,700	25	430,000	22	14,300	21	15,900	----	----------	32	17,600	1.9	48,000	0.9	330
Marshall	42	4,935,000	35	2,607,000	18	32,700	21	136,500	24	18,700	20	4,000	----	----------	40	63,200	1.8	55,900	0.5	570
Mills	28	2,352,000	32	808,000	14	34,400	26	546,000	21	9,400	17	8,500	----	----------	65	26,000	2.0	22,600	2.0	7,800
Mitchell	40	2,580,000	36	2,700,000	21	77,700	21	11,500	30	249,000	23	5,900	15	36,000	70	126,000	1.6	32,900	1.1	2,500
Monona	28	3,976,000	31	620,000	13	157,300	22	605,000	26	52,000	15	4,000	----	----------	44	44,000	1.7	17,600	1.7	27,800
Monroe	18	918,000	33	636,000	19	55,100	22	149,600	20	800	17	6,800	----	----------	15	3,700	0.9	23,400	0.8	100
Montgomery	30	2,520,000	32	524,000	16	64,600	25	692,500	21	7,700	18	7,700	----	----------	28	15,400	1.5	33,900	2.0	1,600
Muscatine	34	2,441,000	23	501,000	15	9,100	21	72,400	21	142,800	20	60,000	----	----------	56	137,200	1.3	31,400	1.0	900
O'Brien	39	4,407,000	32	2,384,000	20	72,800	25	7,700	21	264,600	18	3,600	13	3,700	53	95,400	1.4	28,100	1.0	9,000
Osceola	42	3,091,000	43	2,623,000	15	54,000	26	7,000	24	200,400	17	5,400	10	7,500	70	68,600	1.6	15,200	1.4	15,800
Page	27	2,791,000	35	672,000	17	44,700	26	852,000	27	8,100	17	15,800	----	----------	37	16,600	1.6	48,000	1.2	1,200
Palo Alto	42	3,759,000	34	2,043,000	12	39,600	15	7,000	23	37,900	17	6,800	9	9,900	65	5,200	1.3	14,000	1.1	34,300
Plymouth	33	6,204,000	26	2,009,000	13	509,600	20	60,000	15	97,500	16	1,400	8	880	26	131,400	1.3	31,300	1.5	11,600

FINAL CROP REPORT, 1913—CONTINUED

AVERAGE YIELD PER ACRE AND TOTAL PRODUCTION—BY COUNTIES

Counties	Corn		Oats		Spring Wheat		Winter Wheat		Barley		Rye		Flax Seed		Potatoes		Hay—Tame		Hay—Wild	
	Bushels per acre	Total Bushels	Bushels per acre	Total Bushels	Bushels per acre	Total Bushels	Bushels per acre	Total Bushels	Bushels per acre	Total Bushels	Bushels per acre	Total Bushels	Bushels per acre	Total Bushels	Bushels per acre	Total Bushels	Tons per acre	Total Tons	Tons per acre	Total Tons
Pocahontas	39	4,602,000	33	2,979,000	15	24,000	21	17,800	18	18,000	17	4,900	6	5,500	37	44,400	1.2	17,100	1.1	23,300
Polk	34	3,298,000	35	1,242,000	15	54,000	24	480,000	26	3,600	19	5,100	----	----------	32	43,200	1.9	43,300	1.3	4,500
Pottawattamie	31	6,138,000	32	1,414,000	16	236,800	26	728,000	25	87,500	19	14,800	----	----------	36	88,200	1.3	43,800	1.4	12,700
Poweshiek	34	3,944,000	32	1,571,000	13	23,400	22	30,800	27	37,800	20	8,000	----	----------	36	39,600	1.4	40,800	1.2	480
Ringgold	24	1,792,000	33	775,000	15	3,000	22	193,600	23	500	16	4,100	----	----------	48	7,200	1.6	57,600	1.1	360
Sac	38	4,332,000	30	2,085,000	13	18,800	22	14,000	23	126,500	18	1,600	8	400	43	51,600	1.6	41,600	1.2	10,500
Scott	36	2,667,000	30	750,000	17	27,800	24	132,700	19	461,700	17	54,400	----	----------	57	342,000	1.6	44,800	1.5	4,500
Shelby	31	4,110,000	34	1,604,000	14	162,400	22	33,000	25	217,500	20	8,800	----	----------	32	41,600	1.4	38,300	1.5	8,500
Sioux	42	7,140,000	35	2,947,000	15	445,500	22	35,200	22	407,000	17	600	10	1,400	50	95,000	1.7	30,100	1.4	26,700
Story	40	4,960,000	39	2,351,000	19	13,300	26	109,200	27	4,300	18	4,800	----	----------	49	24,500	1.7	48,400	1.2	8,500
Tama	39	4,875,000	34	2,325,000	20	66,000	26	54,600	25	262,500	18	9,000	----	----------	42	75,600	1.7	65,900	1.0	3,000
Taylor	27	1,971,000	43	871,000	15	3,700	27	494,000	29	11,300	25	17,500	----	----------	48	21,600	1.7	49,600	1.1	730
Union	25	1,550,000	36	792,000	19	14,200	22	61,600	26	3,100	18	5,200	----	----------	37	25,900	1.5	36,700	1.5	1,500
Van Buren	25	1,375,000	33	670,000	16	1,200	19	38,000	21	1,400	17	11,200	----	----------	49	11,270	1.4	43,900	1.0	50
Wapello	28	1,534,000	37	677,000	16	9,200	22	187,000	16	3,200	16	16,800	----	----------	46	29,900	1.2	31,200	----	----------
Warren	26	2,176,000	33	660,000	15	19,500	21	508,200	27	7,500	23	23,000	----	----------	27	18,900	2.0	60,400	1.0	650
Washington	30	2,931,000	35	1,694,000	16	8,900	20	45,200	23	6,600	17	7,800	----	----------	48	25,400	1.6	52,000	1.0	95
Wayne	25	1,700,000	37	1,095,000	14	800	23	98,900	20	1,200	17	10,200	----	----------	40	8,000	1.2	45,000	1.0	80
Webster	42	5,628,000	38	3,708,000	16	56,000	11	15,400	26	9,300	20	1,200	9	3,500	50	45,000	1.7	37,900	1.3	29,900
Winnebago	42	2,490,000	35	1,246,000	14	229,600	16	900	26	119,600	20	2,400	9	12,600	70	67,900	1.5	19,000	1.5	40,200
Winneshiek	43	3,053,000	35	2,145,000	16	120,000	18	19,800	23	492,200	20	37,200	10	11,600	70	91,000	1.5	69,700	1.1	5,200
Woodbury	32	5,952,000	25	1,300,000	12	144,000	18	219,600	18	69,300	18	2,800	8	400	34	51,000	1.4	30,800	1.4	18,200
Worth	42	2,150,000	33	1,567,000	14	168,000	18	5,700	26	136,000	18	4,100	11	33,000	60	78,000	1.8	27,500	1.4	25,000
Wright	40	4,216,000	32	2,636,000	17	42,500	24	10,800	29	43,500	16	1,000	10	2,200	45	40,500	1.6	40,300	1.1	13,000
Totals		329,343,000		164,851,000		5,510,200		11,693,900		8,756,300		1,274,500		223,490		5,532,170		4,010,300		910,205
Averages	34.9		34.2		15.1		23.1		23.8		18.3		10.0		47.3		1.5		1.3	

PART XII.

Statistical Tables of Iowa's Principal Farm Crops

CORN CROPS—1880, 1885, 1890.

Statistics Compiled from Reports of Secretary of Iowa Agricultural Society.

Year	Average yield per acre	Total yield	Average farm value per bushel December 1st	Total value	Acreage
1880	41	230,633,200	$ .25	$ 57,658,300	5,625,200
1885	33	224,636,522	.23	51,666,400	6,803,834
1890	28	239,675,156	.41	98,266,814	8,550,827

CORN CROPS—1896-1913.

Statistics Compiled from Reports of Crop Service Division of Iowa State Department of Agriculture.

Year	Average yield per acre	Total yield	Average farm value per bushel December 1st	Total value	Acreage
1896	39	312,692,210	$ .14	$ 43,916,900	8,043,390
1897	29	239,452,150	.17	40,706,860	8,253,522
1898	34.5	289,214,850	.23	66,519,400	8,396,286
1899	36.3	306,852,710	.23	70,429,410	8,460,521
1900	40.3	345,055,040	.27	93,164,860	8,618,660
1901	26.2	227,908,850	.50	113,954,000	8,687,480
1902	34	296,950,230	.28	82,432,700	8,700,000
1903	31	230,511,310	.36	82,984,071	7,398,320
1904	36	323,853,330	.35	113,348,665	9,000,000
1905	37.2	345,871,840	.35	121,055,144	9,285,150
1906	41	388,836,252	.33	128,155,143	9,443,960
1907	29.6	246,898,460	.44	108,635,322	8,858,000
1908	35.9	301,873,150	.51	153,955,306	8,399,610
1909	34.6	308,036,868	.51	157,098,802	8,681,850
1910	39.8	334,374,428	.36	120,374,794	8,399,712
1911	32.9	281,366,600	.54	151,937,964	8,534,500
1912	45.8	421,368,400	.36	151,698,624	9,199,610
1913	**34.9**	**329,343,000**	**.59**	**194,311,370**	9,434,500
Average 18 years	35.4	307,217,760	$ .36	$ 110,871,074	8,655,282

OATS—1880, 1885, 1890.

Statistics Compiled from Reports of Secretary of Iowa Agricultural Society.

Year	Average yield per acre	Total yield	Average farm value per bushel December 1st	Total value	Acreage
1880	35	42,288,800	$ .23	$ 9,496,424	1,179,680
1885	32.5	71,737,900	.21	15,064,959	2,207,320
1890	29	80,002,735	.38	30,401,039	2,758,715

OATS—1896-1913.

Statistics Compiled from Reports of Crop Service Division of Iowa State Department of Agriculture.

Year	Average yield per acre	Total yield	Average farm value per bushel December 1st	Total value	Acreage
1896	26	73,450,000	$ .12	$ 8,814,000	2,825,000
1897	30	132,517,150	.16	21,211,380	4,405,782
1898	32	139,915,340	.21	29,383,220	4,299,243
1899	34.5	140,647,300	.19	26,722,980	4,069,557
1900	35	138,832,300	.20	27,766,460	3,991,690
1901	32	114,883,000	.35	40,209,230	3,799,220
1902	31	92,907,900	.24	22,297,000	3,770,624
†1903	25.9	99,012,660	.30	29,703,798	3,822,822
1904	29.4	118,435,570	.26	30,793,284	4,018,980
1905	33.8	146,439,240	.25	36,609,810	4,177,545
1906	34	142,036,530	.27	38,349,878	4,166,800
1907	24.5	111,190,400	.39	43,364,256	4,536,170
1908	25.5	112,830,490	.43	48,517,110	4,431,650
1909	27	117,083,850	.35	40,979,348	4,312,134
1910	36	169,207,098	.27	45,685,916	4,697,749
1911	25.7	120,208,300	.41	59,285,403	4,660,500
1912	44.4	206,949,700	.27	55,876,419	4,665,100
1913	34.2	164,851,000	.34	56,049,340	4,824,400
Average 18 years	31.2	130,077,657	$ .28	$ 36,756,602	$ 4,193,054

*Short corn crop.

†Excessive moisture.

WHEAT 1880, 1885, 1890.

Statistics Compiled from Reports of Secretary of Iowa Agricultural Society.

Year	Average yield per acre spring wheat	Average yield per acre winter wheat	Total yield spring wheat	Total yield winter wheat	Total yield all wheat	Average farm price Dec. 1st	Total farm value December 1st	Acreage
1880	10.5	------	------------	------------	36,099,760	$.82	$29,501,803	3,437,948
1885	12	------	------------	------------	31,776,108	.61	19,383,426	2,648,009
1890	11.7	------	------------	------------	25,114,552	.78	19,589,350	2,092,896

WHEAT—1896-1913.

Statistics Compiled from Reports of Crop Service Division of Iowa State Department of Agriculture.

Year	Average yield per acre spring wheat	Average yield per acre winter wheat	Total yield spring wheat	Total yield winter wheat	Total yield all wheat	Average farm price Dec. 1st	Total farm value December 1st	Acreage
1896	13	17	7,047,235	3,351,550	10,398,785	$.57	$ 6,020,000	739,245
1897	13.4	13	12,941,600	1,671,454	14,613,054	.74	10,813,650	1,222,974
1898	14.8	16.5	19,152,352	3,168,916	22,321,268	.53	11,602,000	1,484,682
1899	12.7	11	19,574,792	226,040	19,900,830	.58	10,701,490	1,559,931
1900	14.3	13.3	20,280,280	1,018,070	21,288,350	.60	12,799,370	1,492,630
1901	15.3	17.6	17,429,230	865,770	18,295,000	.60	10,965,000	1,188,239
1902	13	18	12,680,800	825,045	13,532,845	.53	7,062,640	1,021,281
1903	12.6	16.9	9,481,350	1,435,380	10,916,730	.67	7,167,643	837,422
1904	9.1	14.3	7,080,430	1,017,000	8,097,430	.89	7,044,809	846,070
1905	14.4	20.2	5,155,760	1,253,020	6,408,780	.72	4,614,321	426,068
1906	15	23	5,603,880	1,566,050	7,169,930	.64	4,579,697	443,810
1907	13	19.8	4,402,320	1,698,101	6,100,421	.82	4,974,302	424,407
1908	15.4	19.7	4,968,250	1,678,540	6,646,790	.86	5,716,239	408,614
1909	12.5	18.2	3,805,460	3,621,953	7,431,413	.90	6,688,272	502,742
1910	19.3	18.5	6,773,799	3,635,405	10,409,204	.86	8,951,915	546,175
1911	13.1	19.7	4,674,500	3,959,000	8,633,500	.89	7,683,715	559,277
1912	18.7	24.3	9,486,700	8,133,530	17,620,230	.77	13,554,135	840,360
1913	15.1	23.1	5,510,200	11,693,900	17,204,100	.77	13,136,953	871,010
Av. 18 yrs.	14.2	18.0	9,780,719	2,823,262	12,610,481	$.72	$ 8,559,786	856,055

BARLEY—1880, 1885, 1890.

Statistics Compiled from Reports of Secretary of Iowa Agricultural Society.

Year	Average yield per acre	Total yield	Average farm value per bushel December 1st	Total value	Acreage
1880	23	4,600,000	$ .42	$ 1,932,000	200,000
1885	27	5,737,095	.33	1,893,241	212,485
1890	21	3,661,368	.47	1,722,254	152,682

BARLEY—1896-1913.

Statistics Compiled from Reports of Crop Service Division of Iowa State Department of Agriculture.

Year	Average yield per acre	Total yield	Average farm value per bushel December 1st	Total value	Acreage
1896	29	15,881,618	$ .20	$ 3,176,320	547,642
1897	25	14,076,850	.23	3,237,670	551,867
1898	27.5	14,138,000	.30	4,209,740	509,580
1899	25.6	14,719,310	.30	4,415,570	557,598
1900	25.3	12,695,200	.33	4,189,410	501,740
1901	24.2	14,654,410	.44	6,447,940	604,610
1902	25	15,380,910	.33	5,075,710	594,070
1903	24.7	12,179,790	.37	4,506,522	493,108
1904	25	12,317,710	.34	4,188,021	493,370
1905	27.5	15,566,770	.33	5,137,034	565,700
1906	26.5	14,858,830	.36	5,349,178	558,870
1907	24.6	9,893,330	.60	5,935,998	397,210
1908	26.7	10,629,660	.50	5,314,830	307,408
1909	17.5	10,352,040	.46	4,761,938	562,622
1910	25.9	8,614,541	.56	4,824,143	324,671
1911	22.9	7,197,090	.90	6,447,381	313,147
1912	32.5	9,587,760	.50	4,793,880	294,935
1913	23.8	8,756,300	.53	4,640,839	368,600
Average 18 years	25.5	12,305,562	.42	4,815,674	474,814

RYE—1880, 1885, 1890.

Statistics Compiled from Reports of Secretary of Iowa Agricultural Society.

Year	Average yield per acre	Total yield	Average farm value per bushel December 1st	Total value	Acreage
1880	14	574,000	$ .38	$ 218,120	41,000
1885	15	1,710,000	.42	718,200	114,000
1890	16	1,608,960	.51	820,570	100,560

RYE—1896-1913.

Statistics Compiled from Reports of Crop Service Division of Iowa State Department of Agriculture.

Year	Average yield per acre	Total yield	Average farm value per bushel December 1st	Total value	Acreage
1896	16	1,891,716	$ .25	$ 486,680	121,670
1897	15	3,490,344	.34	1,186,710	226,198
1898	16	3,370,550	.38	1,280,800	210,300
1899	16.3	2,061,160	.40	824,460	126,236
1900	15.6	1,621,130	.43	697,300	103,680
1901	15.8	859,630	.48	859,630	54,390
1902	17	882,830	.40	353,132	55,150
1903	15.6	1,923,060	.44	846,146	123,273
1904	15	1,517,090	.54	819,228	99,500
1905	18	1,283,500	.52	667,420	71,305
1906	17.5	1,093,160	.48	520,719	62,530
1907	17	900,060	.61	549,036	52,975
1908	17.1	869,072	.63	547,515	50,893
1909	13.4	556,846	.60	334,107	41,606
1910	13.8	407,058	.61	248,305	29,502
1911	16.8	486,130	.79	384,043	28,710
1912	20.7	888,530	.61	542,003	42,970
1913	18.3	1,274,500	.59	751,955	69,830
Average 18 years	16.4	1,409,798	$ .51	$ 661,063	87,263

HAY--1880, 1885, 1890.

Statistics Compiled from Reports of Secretary of Iowa Agricultural Society.

Year	Average yield tame hay	Total yield—tons	Average yield wild hay	Total yield—tons	Total yield all hay—tons	Average value per ton—tame hay	Average value per ton—wild hay	Total value—all hay	Acreage
1880	------	------------	------	------------	------------	------	------	------------	------------
1885	------	------------	------	------------	------------	------	------	------------	------------
1890 ---	1.5	4,991,335	------	------------	------------	$6.84	------	$34,140,731	3,327,557

[1] No authentic data obtainable.

HAY—1896-1913.

Statistics Compiled from Reports of Crop Service Division of Iowa State Department of Agriculture.

Year	Average yield tame hay	Total yield—tons	Average yield wild hay	Total yield—tons	Total yield all hay—tons	Average value per ton—tame hay	Average value per ton—wild hay	Total value—all hay	Acreage
1896	1.5	3,376,440	1.5	2,325,000	5,701,440	$4.50	$3.30	$22,782,000	3,800,960
1897	1.6	3,362,287	1.3	1,939,117	5,301,320	4.50	3.70	22,304,000	3,315,972
1898	1.7	3,852,561	1.2	1,645,419	5,498,080	4.30	3.50	22,281,000	4,104,967
1899	1.5	4,852,941	1.2	1,458,195	5,311,130	5.75	4.90	29,350,000	3,742,655
1900	1.4	3,609,010	1.	1,530,050	5,139,060	6.50	5.00	31,120,000	4,078,965
1901	1.4	3,711,680	1.2	1,268,700	4,980,380	8.25	6.30	38,712,000	3,608,450
1902	1.8	4,439,040	1.3	1,202,860	5,641,900	6.80	5.50	36,787,322	3,391,408
1903	1.9	5,216,404	1.3	1,191,345	6,407,749	5.75	4.95	35,891,480	3,651,894
1904	1.5	4,499,000	1.2	1,091,590	5,590,680	5.62	4.50	30,197,040	3,707,298
1905	1.8	6,477,300	1.2	1,313,310	7,790,610	5.50	4.50	41,535,045	4,692,925
1906	1.3	4,892,950	1.2	1,110,690	6,003,640	7.50	5.50	42,805,920	4,418,600
1907	1.5	5,117,878	1.3	1,172,590	6,290,468	8.50	6.75	51,316,945	4,268,730
1908	1.8	5,838,640	1.6	1,445,989	7,284,620	6.16	5.09	43,326,060	4,146,870
1909	1.7	5,828,580	1.4	1,219,630	7,048,210	7.42	5.90	50,443,781	4,299,740
1910	1.1	3,876,844	1.1	807,280	4,684,124	10.15	8.00	45,808,207	4,367,725
1911	0.8	3,246,200	0.9	683,385	3,929,585	13.44	10.28	50,653,116	4,214,540
1912	1.6	4,287,600	1.4	1,085,440	5,373,040	9.89	7.43	50,469,183	3,682,359
1913	1.5	4,010,300	1.3	910,205	4,920,505	9.93	8.80	47,832,083	3,359,365
Av. 18 years	1.5	4,471,984	1.3	1,300,044	5,716,475	7.25	5.77	38,423,066	3,936,301

FLAX—1880, 1885, 1890.

Statistics Compiled from Reports of Secretary of Iowa Agricultural Society.

Year	Average yield per acre	Total yield	Average farm value per bushel December 1st	Total value	Acreage
1880	10	1,034,200	$ 1.00	$ 1,034,200	103,420
[1]1885	----	--------------	.94	2,503,293	--------------
1890	10.5	2,929,081	1.10	3,276,989	283,722

[1]No other data.

FLAX—1896-1913.

Statistics Compiled from Reports of Crop Service Division of Iowa State Department of Agriculture.

Year	Average yield per acre	Total yield	Average farm value per bushel December 1st	Total value	Acreage
1896	9.5	1,946,720	$ .95	$ 1,135,000	199,128
1897	10	2,498,600	.87	2,173,782	249,852
1898	10.5	2,376,600	.80	1,901,280	225,014
1899	11.2	1,597,790	1.04	1,661,898	142,175
1900	11.7	1,222,980	1.50	1,834,470	108,850
1901	8.8	916,890	1.29	916,890	104,140
1902	8	755,350	1.00	725,350	94,767
1903	8.7	355,160	.78	277,024	40,825
1904	11	591,140	1.15	679,811	51,370
1905	9.8	173,770	.90	156,393	17,732
1906	10.7	205,280	.97	200,091	19,160
1907	10.8	461,960	.98	408,640	42,790
1908	11.3	461,580	1.01	466,195	40,833
1909	10	173,650	1.29	223,647	17,365
1910	8.6	170,387	2.28	388,482	19,821
1911	8.5	173,710	2.00	347,420	20,205
1912	11.3	423,060	1.31	554,208	37,505
1913	10.0	223,490	1.36	303,946	22,255
Average 18 years	10.6	818,229	$ 1.19	$ 797,474	80,756

POTATOES—1880, 1885, 1890.

Statistics Compiled from Reports of Secretary of Iowa Agricultural Society.

Year	Average yield per acre	Total yield	Average farm value per bushel December 1st	Total value	Acreage
1880	95	10,165,000	$ .35	$ 3,557,750	107,000
1885	82	12,874,000	.40	5,149,600	157,000
1890	49	8,332,352	.81	6,749,205	170,048

POTATOES—1896-1913.

Statistics Compiled from Reports of Crop Service Division of Iowa State Department of Agriculture.

Year	Average yield per acre	Total yield	Average farm value per bushel December 1st	Total value	Acreage
1896	87	14,814,795	$ .21	$ 2,962,950	170,285
1897	60	10,051,910	.45	4,523,360	163,248
1898	76	12,538,410	.31	3,826,900	164,456
1899	98	15,252,934	.24	3,660,714	154,243
1900	78	10,850,900	.40	4,340,360	149,690
*1901	37.4	5,098,460	.90	4,588,610	136,300
1902	91	12,051,670	.34	4,095,650	138,484
†1903	53.8	6,082,694	.75	4,562,020	113,433
1904	125	14,255,680	.28	3,991,590	113,250
1905	84	9,352,190	.50	4,676,045	111,335
1906	101	11,697,500	.48	5,614,800	115,310
1907	84	9,847,430	.62	6,105,406	117,350
1908	89.9	10,658,290	.59	6,288,391	118,517
1909	90	12,427,595	.53	6,586,625	138,139
1910	75.3	9,986,881	.58	5,792,391	132,640
1911	71	9,386,390	.71	8,353,887	132,865
1912	104	12,904,500	.44	5,677,980	124,030
1913	47.3	5,532,170	.85	4,702,341	117,000
Average 18 years	80.7	10,710,578	.51	5,019,446	133,920

*Very dry.
†Very wet.

ACREAGE, PRODUCTION AND VALUE OF THE PRINCIPAL FARM CROPS OF THE UNITED STATES IN 1912 AND 1913, BY STATES.

Figures taken from "Farmers Bulletin No. 570," issued by the United States Department of Agriculture.

CORN.

States	Acreage (000 omitted).		Yield per acre		Total production (000 omitted)		Price per bushel Dec. 1 to prod'cers		Value based on prices Dec. 1 to producers (000 omitted)	
	1913	1912	1913	1912	1913	1912	1913	1912	1913	1912
	Acres	Acres	Bu.	Bu.	Bu.	Bu.	Cts.	Cts.	Dolls.	Dolls.
Maine	16	16	38	40	608	640	87	75	529	480
New Hampshire	22	23	37	46	814	1,058	81	75	659	794
Vermont	45	45	37	40	1,665	1,800	81	72	1,349	1,296
Massachusetts	48	47	40	45	1,944	2,115	85	77	1,652	1,629
Rhode Island	11	11	36	42	402	456	99	88	398	401
Connecticut	61	60	38	50	2,348	3,000	85	77	1,996	2,310
New York	527	512	28	39	15,020	19,763	81	70	12,166	13,834
New Jersey	275	273	40	38	10,862	10,374	75	68	8,146	7,054
Pennsylvania	1,463	1,449	39	42	57,057	61,582	72	63	41,081	38,797
Delaware	197	195	32	34	6,206	6,630	59	51	3,662	3,381
Maryland	670	670	33	36	22,110	24,455	65	55	14,372	13,450
Virginia	1,980	1,980	26	24	51,480	47,520	76	71	29,125	33,739
West Virginia	732	725	31	34	22,692	24,505	80	65	18,154	15,928
North Carolina	2,835	2,808	20	18	55,282	51,106	88	83	48,648	42,418
South Carolina	1,975	1,915	20	18	38,512	34,278	97	85	37,357	29,136
Georgia	4,066	3,910	16	14	63,023	53,958	91	85	57,351	45,864
Florida	675	655	15	13	10,125	8,515	82	79	8,302	6,727
Ohio	3,900	4,075	38	43	146,250	174,410	63	45	92,138	78,484
Indiana	4,900	4,947	36	40	176,400	199,364	60	42	105,840	83,733
Illinois	10,450	10,658	27	40	282,150	426,320	63	41	177,754	174,791
Michigan	1,675	1,625	34	34	56,112	55,250	67	57	37,595	31,492
Wisconsin	1,650	1,632	40	36	66,825	58,262	60	51	40,095	29,714
Minnesota	2,400	2,266	40	34	96,000	78,177	53	37	50,880	28,925
*Iowa	9,950	10,047	34	43	338,300	432,021	60	35	202,980	151,207
Missouri	7,375	7,622	18	32	129,062	243,904	74	46	95,506	112,196
North Dakota	375	328	29	27	10,800	8,758	52	43	5,616	3,766
South Dakota	2,640	2,495	26	31	67,320	76,347	56	37	37,699	28,248
Nebraska	7,610	7,609	15	24	114,150	182,616	65	37	74,198	67,568
Kansas	7,320	7,575	3	23	23,424	174,225	78	40	18,271	69,690
Kentucky	3,650	3,600	20	30	74,825	109,440	76	55	56,867	60,192
Tennessee	3,350	3,392	20	26	68,675	88,298	77	61	52,880	53,862
Alabama	3,200	3,150	17	17	55,360	54,180	89	79	49,270	42,802
Mississippi	3,150	3,106	20	18	63,000	56,840	77	71	48,510	40,356
Louisiana	1,900	1,805	22	18	41,800	32,490	77	68	32,186	22,093
Texas	6,800	7,300	24	21	163,200	153,300	82	64	133,824	98,112
Oklahoma	4,750	5,448	11	19	52,250	101,878	72	41	37,620	41,770
Arkansas	2,475	2,475	19	20	47,025	50,490	78	67	36,680	33,828
Montana	28	24	32	26	882	612	77	70	679	428
Wyoming	17	16	29	23	493	368	80	64	394	236
Colorado	420	420	15	21	6,300	8,736	73	50	4,599	4,368
New Mexico	85	93	18	22	1,572	2,083	75	75	1,179	1,562
Arizona	17	16	28	33	476	528	110	100	524	528
Utah	10	9	34	30	340	270	70	75	238	202
Nevada	1	1	34	30	34	30	118	98	40	29
Idaho	14	12	32	33	448	394	68	70	305	276
Washington	34	31	28	27	952	846	80	77	762	651
Oregon	21	20	28	32	588	630	70	75	419	472
California	55	52	33	37	1,815	1,924	88	85	1,597	1,635
United States	105,820	107,083	23.1	29.2	2,446,988	3,124,746	69.1	48.7	1,692,092	1,520,454

*Statistics by counties, showing acreage, average yield and total yield of Iowa farm crops compiled by the Iowa Department of Agriculture from reports received, as required by Chapter 86, Section 1, Acts of the Thirty-third General Assembly, will be found in part 3 of this year book.

OATS.

States	Acreage (000 omitted)		Yield per acre		Total production (000 omitted)		Price per bushel Dec. 1 to prod'c'rs		Value based on prices Dec. 1 to producers (000 omitted)	
	1913	1912	1913	1912	1913	1912	1913	1912	1913	1912
	Acres	Acres	Bu.	Bu.	Bu.	Bu.	Cts.	Cts.	Dolls.	Dolls.
Maine	140	133	40	35	5,600	4,602	55	51	3,080	2,347
New Hampshire	12	12	35	39	420	468	56	48	235	225
Vermont	79	77	39	43	3,081	3,311	52	48	1,602	1,589
Massachusetts	9	8	35	34	315	272	54	47	170	128
Rhode Island	2	2	26	29	52	57	50	45	26	26
Connecticut	11	11	28	31	308	338	55	49	169	166
New York	1,275	1,192	34	31	42,712	36,714	47	42	20,075	15,420
New Jersey	70	67	29	28	2,030	1,849	47	44	954	814
Pennsylvania	1,154	1,096	31	33	35,774	36,377	46	41	16,456	14,915
Delaware	4	4	30	30	122	122	51	45	62	55
Maryland	45	45	28	30	1,260	1,350	48	45	605	608
Virginia	195	175	22	22	4,192	3,885	52	52	2,180	2,020
West Virginia	115	111	24	28	2,760	3,108	51	47	1,408	1,461
North Carolina	230	204	20	19	4,485	3,794	61	62	2,736	2,352
South Carolina	360	324	24	22	8,460	6,966	71	66	6,007	4,598
Georgia	420	364	22	21	9,240	7,571	68	65	6,283	4,921
Florida	50	43	18	17	900	740	70	70	630	518
Ohio	1,800	2,120	30	44	54,360	93,280	40	33	21,744	30,782
Indiana	1,700	1,990	21	40	36,380	79,799	38	30	13,824	23,940
Illinois	4,375	4,220	24	43	101,125	182,726	38	30	39,568	54,818
Michigan	1,500	1,485	30	35	45,000	51,826	39	33	17,550	17,103
Wisconsin	2,275	2,272	36	37	83,038	84,746	37	32	30,724	27,119
Minnesota	2,980	2,948	38	42	112,644	122,932	32	26	36,046	31,962
Iowa	4,880	4,928	34	44	168,360	217,818	34	27	57,242	58,811
Missouri	1,250	1,125	21	33	26,500	37,125	45	35	11,925	12,994
North Dakota	2,250	2,300	26	41	57,825	95,220	30	22	17,348	20,948
South Dakota	1,590	1,550	26	34	42,135	52,390	34	25	14,326	13,098
Nebraska	2,250	2,275	26	24	59,625	55,510	38	30	22,658	16,653
Kansas	1,760	1,720	20	32	34,320	55,040	45	35	15,444	19,264
Kentucky	160	150	20	27	3,168	4,035	52	44	1,647	1,775
Tennessee	300	258	21	22	6,300	5,599	53	47	3,339	2,632
Alabama	325	260	20	20	6,662	5,200	69	62	4,597	3,224
Mississippi	140	113	20	17	2,800	1,966	63	60	1,764	1,180
Louisiana	45	34	22	21	990	707	57	51	564	361
Texas	1,000	865	32	36	32,500	31,140	51	43	16,575	13,390
Oklahoma	1,030	936	18	25	18,540	23,494	45	34	8,343	7,988
Arkansas	240	175	26	20	6,360	3,482	53	50	3,371	1,741
Montana	500	476	44	48	21,750	22,848	32	35	6,960	7,997
Wyoming	220	205	38	42	8,360	8,569	40	37	3,344	3,171
Colorado	305	290	35	43	10,675	12,412	44	38	4,697	4,717
New Mexico	50	53	30	35	1,500	1,839	60	45	900	828
Arizona	7	6	43	45	301	268	50	70	150	188
Utah	90	91	46	46	4,140	4,222	40	49	1,656	2,069
Nevada	11	10	43	40	473	400	65	52	307	208
Idaho	325	348	46	49	15,112	17,017	32	35	4,836	5,956
Washington	300	284	48	48	14,250	13,689	40	40	5,700	5,476
Oregon	360	359	42	38	15,228	13,714	38	41	5,787	5,623
California	210	200	32	35	6,636	7,800	60	55	3,982	4,290
United States	38,399	37,917	29.2	37.4	1,121,768	1,418,337	39.2	31.9	439,596	452,469

*Statistics by counties, showing acreage, average yield and total yield of Iowa farm crops compiled by the Iowa Department of Agriculture from reports received, as required by Chapter 86, Section 1, Acts of the Thirty-third General Assembly, will be found in part 3 of this year book.

WINTER WHEAT.

States	Acreage (000 omitted)		Yield per acre		Total production (000 omitted)		Price per bushel Dec. 1 to prod'c'rs		Value based on prices Dec. 1 to producers (000 omitted)	
	1913	1912	1913	1912	1913	1912	1913	1912	1913	1912
	Acres	Acres	Bu.	Bu.	Bu.	Bu.	Cts.	Cts.	Dolls.	Dolls.
New York	340	335	20.0	16.0	6,800	5,360	93	99	6,324	5,306
New Jersey	80	79	17.6	18.5	1,408	1,462	96	98	1,352	1,433
Pennsylvania	1,286	1,240	17.0	18.0	21,862	22,320	91	95	19,894	21,204
Delaware	113	111	14.5	17.5	1,638	1,942	88	96	1,441	1,864
Maryland	610	599	13.3	15.0	8,113	8,985	89	95	7,221	8,536
Virginia	780	741	13.6	11.6	10,608	8,596	96	101	10,184	8,682
West Virginia	235	233	13.0	14.5	3,055	3,378	100	101	3,055	3,412
North Carolina	605	598	11.7	8.9	7,078	5,322	106	111	7,503	5,907
South Carolina	79	79	12.3	9.2	972	727	130	119	1,264	865
Georgia	140	132	12.2	9.3	1,708	1,228	120	122	2,050	1,498
Ohio	1,950	1,220	18.0	8.0	35,100	9,760	90	98	31,590	9,565
Indiana	2,150	1,260	18.5	8.0	39,775	10,080	88	93	35,002	9,374
Illinois	2,240	1,183	18.7	8.3	41,888	9,819	86	88	36,024	8,641
Michigan	835	700	15.3	10.0	12,776	7,000	89	96	11,371	6,720
Wisconsin	87	87	20.1	19.5	1,749	1,696	82	83	1,434	1,408
Minnesota	50	-------	16.2	-----	810	-------	76	-----	616	-----
Iowa	450	300	23.4	23.0	10,530	6,900	76	78	8,003	5,382
Missouri	2,315	1,900	17.1	12.5	39,586	23,750	84	90	33,252	21,375
South Dakota	100	-------	9.0	-----	900	-------	71	-----	639	-------
Nebraska	3,125	2,825	18.6	18.0	58,125	50,850	71	69	41,269	35,086
Kansas	6,655	5,900	13.0	15.5	86,515	91,450	79	74	68,347	67,673
Kentucky	725	686	13.6	10.0	9,860	6,860	96	99	9,466	6,791
Tennessee	700	674	12.0	10.5	8,400	7,077	98	100	8,232	7,077
Alabama	32	30	11.7	10.6	374	318	115	113	430	359
Mississippi	1	8	14.0	12.0	14	96	95	97	13	93
Texas	780	735	17.5	15.0	13,650	11,025	94	93	12,831	10,253
Oklahoma	1,750	1,570	10.0	12.8	17,500	20,096	82	75	14,350	15,672
Arkansas	101	94	13.0	10.0	1,313	940	90	94	1,182	884
Montana	480	475	25.6	24.5	12,288	11,638	66	64	8,110	7,448
Wyoming	40	32	25.0	28.0	1,000	896	72	80	720	717
Colorado	200	193	21.1	24.5	4,220	4,728	78	73	3,292	3,451
New Mexico	35	33	18.6	20.0	651	660	97	90	631	594
Arizona	29	21	32.0	31.0	928	651	110	110	1,021	716
Utah	200	160	23.0	24.0	4,600	3,840	73	75	3,358	2,880
Nevada	16	15	23.0	27.5	368	412	82	100	302	412
Idaho	310	335	27.4	28.7	8,494	9,614	63	66	5,351	6,345
Washington	1,200	988	27.0	27.6	32,400	27,269	73	68	23,652	18,543
Oregon	575	630	21.4	26.8	12,305	16,884	75	72	9,229	12,156
California	300	370	14.0	17.0	4,200	6,290	95	93	3,990	5,850
United States	31,699	26,571	16.5	15.1	523,561	399,919	82.9	80.9	433,995	323,572

*Statistics by counties, showing acreage, average yield and total yield of Iowa farm crops compiled by the Iowa Department of Agriculture from reports received, as required by Chapter 86, Section 1, Acts of the Thirty-third General Assembly, will be found in part [illegible] of this year book.

SPRING WHEAT.

States	Acreage (000 omitted)		Yield per acre		Total production (000 omitted)		Price per bushel Dec. 1 to prod'c'rs		Values based on prices Dec. 1 to producers (000 omitted)	
	1913	1912	1913	1912	1913	1912	1913	1912	1913	1912
	Acres	Acres	Bu.	Bu.	Bu.	Bu.	Cts.	Cts.	Dolls.	Dolls.
Maine	3	3	25.5	23.5	76	70	101	103	77	72
Vermont	1	1	24.5	25.0	24	25	100	98	24	24
Wisconsin	103	101	18.6	18.5	1,916	1,868	82	83	1,571	1,550
Minnesota	4,150	4,325	16.2	15.5	67,230	67,038	76	73	51,095	48,938
*Iowa	345	350	17.0	17.0	5,865	5,950	76	78	4,457	4,641
North Dakota	7,510	7,990	10.5	18.0	78,855	143,820	73	69	57,564	99,236
South Dakota	3,675	3,675	9.0	14.2	33,075	52,185	71	69	23,483	36,008
Nebraska	350	298	12.0	14.1	4,200	4,202	71	69	2,982	2,899
Kansas	55	56	8.5	15.0	468	840	79	74	370	622
Montana	390	328	21.5	23.5	8,385	7,708	66	64	5,534	4,933
Wyoming	50	44	25.0	29.2	1,250	1,285	72	80	900	1,028
Colorado	260	260	21.0	24.0	5,460	6,240	78	73	4,259	4,555
New Mexico	30	26	19.0	22.0	570	572	97	90	553	515
Arizona	--------	2	-----	28.0	----------	56	-----	110	----------	62
Utah	65	76	28.0	29.2	1,820	2,219	73	75	1,329	1,664
Nevada	23	24	31.0	30.2	713	725	82	100	585	725
Idaho	200	175	28.0	28.3	5,600	4,952	63	66	3,528	3,268
Washington	1,100	1,297	19.0	20.4	20,900	26,459	73	68	15,257	17,992
Oregon	175	212	19.5	19.5	3,412	4,134	75	72	2,559	2,976
United States	18,485	19,243	13.0	17.2	239,819	330,348	73.4	70.1	176,127	231,708

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WHEAT.

States	Acreage (000 omitted)		Yield per acre		Total production (000 omitted)		Price per bushel Dec. 1 to prod'c'rs		Value based on prices Dec. 1 to producers (000 omitted)	
	1913	1912	1913	1912	1913	1912	1913	1912	1913	1912
	Acres	Acres	Bu.	Bu.	Bu.	Bu.	Cts.	Cts.	Dolls.	Dolls.
Maine	3	3	25.5	23.5	76	70	101	103	77	72
Vermont	1	1	24.5	25.0	24	25	100	98	24	24
New York	340	335	20.0	16.0	6,800	5,360	93	99	6,324	5,306
New Jersey	80	79	17.6	18.5	1,408	1,462	96	98	1,352	1,433
Pennsylvania	1,286	1,240	17.0	18.0	21,862	22,320	91	95	19,894	21,204
Delaware	113	111	14.5	17.5	1,638	1,942	88	96	1,441	1,864
Maryland	610	599	13.3	15.0	8,113	8,985	89	95	7,221	8,536
Virginia	780	741	13.6	11.6	10,608	8,596	96	101	10,184	8,682
West Virginia	235	233	13.0	14.5	3,055	3,378	100	101	3,055	3,412
North Carolina	605	598	11.7	8.9	7,078	5,322	106	111	7,503	5,907
South Carolina	79	79	12.3	9.2	972	727	130	119	1,264	865
Georgia	140	132	12.2	9.3	1,708	1,228	120	122	2,050	1,498
Ohio	1,950	1,220	18.0	8.0	35,100	9,760	90	98	31,590	9,565
Indiana	2,150	1,260	18.5	8.0	39,775	10,080	88	93	35,002	9,374
Illinois	2,240	1,183	18.7	8.3	41,888	9,819	86	88	36,024	8,641
Michigan	835	700	15.3	10.0	12,776	7,000	89	96	11,371	6,720
Wisconsin	190	188	19.3	19.0	3,665	3,564	82	83	3,005	2,958
Minnesota	4,200	4,325	16.2	15.5	68,040	67,038	76	73	51,711	48,938
*Iowa	795	650	20.6	19.8	16,395	12,850	76	78	12,460	10,023
Missouri	2,315	1,900	17.1	12.5	39,586	23,750	84	90	33,252	21,375
North Dakota	7,510	7,990	10.5	18.0	78,855	143,820	73	69	57,564	99,236
South Dakota	3,775	3,675	9.0	14.2	33,975	52,185	71	69	24,122	36,008
Nebraska	3,475	3,123	17.9	17.6	62,325	55,052	71	69	44,251	37,985
Kansas	6,710	5,956	13.0	15.5	86,983	92,290	79	74	68,717	68,295
Kentucky	725	686	13.6	10.0	9,860	6,860	96	99	9,466	6,791
Tennessee	700	674	12.0	10.5	8,400	7,077	98	100	8,232	7,077
Alabama	32	30	11.7	10.6	374	318	115	113	430	359
Mississippi	1	8	14.0	12.0	14	96	95	97	13	93
Texas	780	735	17.5	15.0	13,650	11,025	94	93	12,831	10,253
Oklahoma	1,750	1,570	10.0	12.8	17,500	20,096	82	75	14,350	15,072
Arkansas	101	94	13.0	10.0	1,313	940	90	94	1,182	884
Montana	870	803	23.8	24.1	20,673	19,346	66	64	13,644	12,381
Wyoming	90	76	25.0	28.7	2,250	2,181	72	80	1,620	1,745
Colorado	460	453	21.0	24.2	9,680	10,968	78	73	7,551	8,006
New Mexico	65	59	18.8	20.9	1,221	1,232	97	90	1,184	1,109
Arizona	29	23	32.0	30.7	928	707	110	110	1,021	778
Utah	265	236	24.2	25.7	6,420	6,059	73	75	4,687	4,544
Nevada	39	39	27.7	29.2	1,081	1,137	82	100	887	1,137
Idaho	510	510	27.6	28.6	14,094	14,566	63	66	8,879	9,613
Washington	2,300	2,285	23.2	23.5	53,300	53,728	73	68	38,909	36,535
Oregon	750	842	21.0	25.0	15,717	21,018	75	72	11,788	15,132
California	300	370	14.0	17.0	4,200	6,290	95	93	3,990	5,850
United States	50,184	45,814	15.2	15.9	763,380	730,267	79.9	76.0	610,122	555,280

*Statistics by counties, showing acreage, average yield and total yield of Iowa farm crops compiled by the Iowa Department of Agriculture from reports received, as required by Chapter 86, Section 1, Acts of the Thirty-third General Assembly, will be found in part 3 of this year book.

RYE.

States	Acreage (000 omitted)		Yield per acre		Total production (000 omitted)		Price per bushel Dec. 1 to prod'c'rs		Value based on prices Dec. 1 to producers (000 omitted)	
	1913	1912	1913	1912	1913	1912	1913	1912	1913	1912
	Acres	Acres	Bu.	Bu.	Bu.	Bu.	Cts.	Cts.	Dolls.	Dolls.
Vermont	1	1	18.0	20.0	18	20	90	90	16	18
Massachusetts	3	3	18.5	18.5	56	56	98	100	55	56
Connecticut	7	7	19.3	17.5	135	122	92	92	124	112
New York	133	128	17.2	16.5	2,288	2,112	75	76	1,716	1,605
New Jersey	70	72	18.0	17.5	1,260	1,260	80	79	1,008	995
Pennsylvania	280	282	17.5	17.5	4,900	4,935	74	77	3,626	3,800
Delaware	1	1	14.0	14.0	14	14	75	81	11	11
Maryland	27	27	14.4	15.5	389	418	76	80	296	334
Virginia	58	48	12.3	12.5	713	600	81	85	578	510
West Virginia	17	17	13.5	13.0	230	221	87	84	200	186
North Carolina	46	44	10.3	9.3	474	409	98	105	465	429
South Carolina	3	3	10.5	9.5	32	28	150	145	48	41
Georgia	13	11	9.5	9.2	124	101	135	140	167	141
Ohio	97	57	16.5	15.5	1,600	884	69	75	1,104	663
Indiana	103	64	15.2	14.5	1,566	928	62	68	971	631
Illinois	49	48	16.5	16.0	808	768	65	70	525	538
Michigan	375	370	14.3	13.3	5,362	4,921	62	65	3,324	3,199
Wisconsin	425	341	17.5	18.3	7,438	6,240	57	61	4,240	3,806
Minnesota	300	262	19.0	23.0	5,700	6,026	48	50	2,736	3,013
*Iowa	60	35	18.2	19.0	1,092	665	60	62	655	412
Missouri	16	15	15.0	14.8	240	222	75	80	180	178
North Dakota	125	48	14.4	18.0	1,800	864	45	47	810	406
South Dakota	50	16	13.2	19.5	660	312	50	52	330	162
Nebraska	120	55	14.5	16.0	1,740	880	60	56	1,044	493
Kansas	45	30	14.0	15.9	630	477	75	68	472	324
Kentucky	22	21	12.4	13.0	273	273	87	88	238	240
Tennessee	17	17	12.0	11.5	204	196	99	98	202	192
Alabama	1	1	11.0	11.5	11	12	140	134	15	16
Texas	2	2	15.0	16.6	30	33	101	110	30	36
Oklahoma	5	4	9.5	12.0	48	48	86	87	41	42
Arkansas	1	1	11.5	10.5	12	10	95	105	11	10
Montana	10	10	21.0	23.5	210	235	55	60	116	141
Wyoming	4	3	19.0	19.0	76	57	64	65	49	37
Colorado	20	25	17.0	19.5	340	488	60	55	204	268
Utah	12	6	17.0	15.0	204	90	60	68	122	61
Idaho	3	3	22.0	22.0	66	66	58	60	38	40
Washington	8	9	21.0	20.0	168	180	60	65	101	117
Oregon	20	22	17.5	16.0	350	352	75	70	262	246
California	8	8	15.0	17.6	120	141	75	90	90	127
United States	2,557	2,117	16.2	16.8	41,381	35,664	63.4	66.3	26,220	23,636

*Statistics by counties, showing acreage, average yield and total yield of Iowa farm crops compiled by the Iowa Department of Agriculture from reports received, as required by Chapter 86, Section 1, Acts of the Thirty-third General Assembly, will be found in part 3 of this year book.

BARLEY.

States	Acreage (000 omitted)		Yield per acre		Total production (000 omitted)		Price per bushel Dec. 1 to prod'c'rs		Value based on prices Dec. 1 to producers (000 omitted)	
	1913	1912	1913	1912	1913	1912	1913	1912	1913	1912
	Acres	Acres	Bu.	Bu.	Bu.	Bu.	Cts.	Cts.	Dolls.	Dolls.
Maine	5	4	28	26	140	105	80	77	112	81
New Hampshire	1	1	28	28	28	28	80	84	22	24
Vermont	12	13	32	35	384	455	80	80	307	364
New York	77	82	27	26	2,056	2,132	69	68	1,419	1,450
Pennsylvania	7	7	26	28	182	192	71	68	129	131
Maryland	5	4	29	27	145	108	64	68	93	73
Virginia	11	10	26	25	286	250	70	75	200	188
Ohio	40	20	24	31	960	620	58	55	557	341
Indiana	8	9	25	30	200	266	50	60	100	160
Illinois	54	57	26	32	1,404	1,796	57	53	800	952
Michigan	85	87	25	26	2,108	2,262	60	65	1,265	1,470
Wisconsin	725	845	25	29	18,125	24,843	60	55	10,875	13,664
Minnesota	1,450	1,490	24	28	34,800	42,018	48	41	16,704	17,227
Iowa	400	470	25	31	10,000	14,570	55	52	5,500	7,576
Missouri	5	6	22	25	110	149	60	66	66	98
North Dakota	1,275	1,176	20	30	25,500	35,162	40	35	10,200	12,307
South Dakota	958	887	18	26	16,765	23,062	46	42	7,712	9,686
Nebraska	110	113	16	22	1,760	2,486	49	42	862	1,044
Kansas	240	176	8	24	1,944	4,136	55	40	1,065	1,654
Kentucky	3	3	27	26	80	78	78	75	62	58
Tennessee	2	2	25	26	50	52	70	80	35	42
Texas	7	6	24	29	168	176	81	78	136	137
Oklahoma	7	8	9	20	63	160	80	50	50	80
Montana	60	39	31	36	1,860	1,424	48	53	893	755
Wyoming	13	11	30	34	396	374	61	62	242	232
Colorado	100	76	32	39	3,250	2,964	56	50	1,820	1,482
New Mexico	4	2	24	35	96	70	72	71	69	50
Arizona	38	36	39	40	1,482	1,440	73	87	1,082	1,253
Utah	30	25	38	45	1,155	1,125	55	59	635	664
Nevada	12	12	41	41	492	492	90	87	443	428
Idaho	180	159	42	44	7,560	6,916	48	51	3,629	3,527
Washington	180	183	40	43	7,290	7,869	52	53	3,791	4,171
Oregon	120	119	35	36	4,200	4,284	55	55	2,310	2,356
California	1,275	1,392	26	30	33,150	41,760	68	70	22,542	29,232
United States	7,499	7,530	23.8	29.7	178,189	223,824	53.7	50.5	95,731	112,957

*Statistics by counties, showing acreage, average yield and total yield of Iowa farm crops compiled by the Iowa Department of Agriculture from reports received, as required by Chapter 86, Section 1, Acts of the Thirty-third General Assembly, will be found in part 3 of this year book.

HAY.

States	Acreage (000 omitted)		Yield per acre		Total production (000 omitted)		Price per ton Dec. 1 to producers		Value based on prices Dec. 1 to producers (000 omitted)	
	1913	1912	1913	1912	1913	1912	1913	1912	1913	1912
	Acres	Acres	Tons	Tons	Tons.	Tons.	Dolls.	Dolls.	Dolls.	Dolls.
Maine	1,194	1,231	1.00	1.16	1,194	1,428	13.90	13.70	16,597	19,564
New Hampshire	495	501	1.00	1.25	495	626	17.20	15.00	8,514	9,390
Vermont	1,000	1,010	1.28	1.50	1,280	1,515	14.50	14.00	18,560	21,210
Massachusetts	475	477	1.21	1.25	575	596	21.10	21.50	12,132	12,814
Rhode Island	58	58	1.17	1.13	68	66	21.20	22.20	1,442	1,465
Connecticut	379	379	1.14	1.15	432	436	20.10	22.50	8,683	9,810
New York	4,700	4,720	1.14	1.25	5,358	5,900	15.30	14.90	81,977	87,910
New Jersey	361	362	1.30	1.44	469	521	19.00	20.00	8,911	10,420
Pennsylvania	3,141	3,173	1.32	1.43	4,146	4,537	14.90	15.60	61,775	70,777
Delaware	72	72	1.30	1.33	94	96	15.70	15.00	1,476	1,440
Maryland	390	381	1.26	1.51	491	575	15.20	14.40	7,463	8,280
Virginia	750	741	1.27	1.20	952	889	15.50	15.20	14,756	13,513
West Virginia	740	745	1.25	1.38	925	1,028	14.90	15.00	13,782	15,420
North Carolina	320	293	1.31	1.30	419	381	16.50	16.70	6,914	6,363
South Carolina	210	194	1.16	1.15	244	223	18.70	18.00	4,563	4,014
Georgia	250	234	1.40	1.35	350	316	17.90	17.00	6,265	5,372
Florida	47	43	1.35	1.25	63	54	18.20	18.10	1,147	977
Ohio	2,960	2,960	1.30	1.36	3,848	4,026	12.80	13.00	49,254	52,338
Indiana	1,800	1,885	1.00	1.37	1,800	2,582	14.10	11.40	25,380	29,435
Illinois	2,500	2,512	.98	1.30	2,450	3,266	14.10	12.60	34,545	41,152
Michigan	2,400	2,395	1.05	1.33	2,520	3,185	13.10	12.70	33,012	40,450
Wisconsin	2,375	2,250	1.62	1.60	3,848	3,600	11.10	12.10	42,713	43,560
Minnesota	1,660	1,661	1.50	1.53	2,490	2,541	6.60	6.40	16,434	16,262
*Iowa	3,000	3,537	1.48	1.40	4,440	4,952	9.60	9.50	42,624	47,044
Missouri	3,000	3,187	.60	1.30	1,800	4,143	14.50	9.80	26,100	40,601
North Dakota	340	364	1.14	1.40	388	510	5.80	5.50	2,250	2,805
South Dakota	460	460	1.20	1.46	552	672	6.50	6.10	3,588	4,099
Nebraska	1,250	1,150	1.34	1.35	1,675	1,552	8.70	8.40	14,572	13,037
Kansas	1,500	1,627	.90	1.50	1,350	2,440	12.50	7.60	16,875	18,544
Kentucky	775	815	.87	1.23	674	1,002	16.50	13.70	11,121	13,727
Tennessee	900	888	1.21	1.30	1,089	1,154	16.20	15.80	17,642	18,233
Alabama	210	209	1.36	1.25	286	261	14.20	14.60	4,061	3,811
Mississippi	220	201	1.33	1.48	293	297	13.50	12.50	3,956	3,712
Louisiana	160	142	1.50	1.65	240	234	12.50	12.70	3,000	2,972
Texas	400	387	1.16	1.40	464	542	11.80	10.40	5,475	5,637
Oklahoma	450	385	.85	1.25	382	481	10.40	7.40	3,973	3,559
Arkansas	320	286	1.20	1.23	384	352	13.50	12.00	5,184	4,224
Montana	660	640	1.80	1.90	1,188	1,216	9.60	8.30	11,405	10,093
Wyoming	480	452	1.90	1.90	912	859	6.70	8.60	6,110	7,387
Colorado	890	870	2.05	2.19	1,824	1,905	10.00	8.70	18,240	16,574
New Mexico	192	187	2.08	2.33	399	436	12.10	8.50	4,828	3,706
Arizona	135	113	4.00	3.40	540	384	11.00	12.00	5,940	4,608
Utah	390	368	2.33	2.78	909	1,023	9.10	8.00	8,272	8,184
Nevada	235	227	2.75	3.00	646	681	11.00	8.70	7,106	5,925
Idaho	705	692	2.90	2.80	2,044	1,938	7.20	6.30	14,717	12,209
Washington	780	776	2.30	2.20	1,794	1,707	10.90	10.10	19,555	17,241
Oregon	825	790	2.10	2.20	1,732	1,738	9.00	8.30	15,588	14,425
California	2,400	2,500	1.50	1.53	3,600	3,825	13.50	13.70	48,600	52,402
United States	48,954	49,530	1.31	1.47	64,116	72,691	12.43	11.79	797,077	856,695

*Statistics by counties, showing acreage, average yield and total yield of Iowa farm crops compiled by the Iowa Department of Agriculture from reports received, as required by Chapter 86, Section 1, Acts of the Thirty-third General Assembly, will be found in part 3 of this year book.

POTATOES.

States	Acreage (000 omitted)		Yield per acre		Total production (000 omitted)		Price per bushel Dec. 1 to prod'c'rs		Value based on prices Dec. 1 to producers (000 omitted)	
	1913	1912	1913	1912	1913	1912	1913	1912	1913	1912
	Acres	Acres	Bu.	Bu.	Bu.	Bu.	Cts.	Cts.	Dolls.	Dolls.
Maine	128	117	220	198	28,160	23,166	53	55	14,925	12,741
New Hampshire	17	17	122	140	2,074	2,380	83	61	1,721	1,452
Vermont	25	26	127	140	3,175	3,640	72	55	2,286	2,002
Massachusetts	27	26	105	130	2,835	3,380	85	75	2,410	2,535
Rhode Island	5	5	130	113	650	565	90	77	585	435
Connecticut	24	23	92	107	2,208	2,461	87	78	1,921	1,920
New York	360	360	74	106	26,640	38,160	80	58	21,312	22,133
New Jersey	94	92	95	108	8,930	9,936	82	66	7,323	6,558
Pennsylvania	265	265	88	109	23,320	28,885	80	57	18,656	16,464
Delaware	11	11	87	100	957	1,100	75	70	718	770
Maryland	43	37	87	112	3,741	4,144	67	58	2,506	2,404
Virginia	105	95	94	87	9,870	8,265	80	65	7,896	5,372
West Virginia	48	47	83	112	3,984	5,264	90	62	3,586	3,264
North Carolina	30	30	80	85	2,400	2,550	82	76	1,968	1,938
South Carolina	10	10	80	90	800	900	130	112	1,040	1,008
Georgia	12	12	81	78	972	936	105	87	1,021	814
Florida	12	11	76	93	912	1,023	117	110	1,067	1,125
Ohio	160	186	64	112	10,240	20,832	85	53	8,704	11,041
Indiana	75	87	53	114	3,975	9,918	84	50	3,339	4,959
Illinois	125	137	46	101	5,750	13,837	89	60	5,118	8,302
Michigan	350	350	96	105	33,600	36,750	53	41	17,808	15,068
Wisconsin	295	291	109	120	32,155	34,920	54	34	17,364	11,873
Minnesota	275	245	110	135	30,250	33,075	52	28	15,730	9,261
*Iowa	150	174	48	109	7,200	18,966	82	46	5,904	8,724
Missouri	85	95	38	84	3,230	7,980	93	69	3,004	5,506
North Dakota	60	52	85	128	5,100	6,656	56	28	2,856	1,864
South Dakota	60	62	78	105	4,680	6,510	63	36	2,948	2,344
Nebraska	118	118	48	80	5,664	9,440	78	51	4,418	4,814
Kansas	73	70	40	82	2,920	5,740	91	73	2,657	4,190
Kentucky	50	51	49	101	2,450	5,151	102	67	2,499	3,451
Tennessee	38	38	64	88	2,432	3,344	97	70	2,359	2,341
Alabama	18	15	84	81	1,512	1,215	105	90	1,588	1,094
Mississippi	12	10	80	89	960	890	100	90	960	801
Louisiana	25	20	70	73	1,750	1,460	96	83	1,680	1,212
Texas	45	52	52	63	2,340	3,276	112	105	2,621	3,440
Oklahoma	32	29	60	60	1,920	1,740	105	93	2,016	1,618
Arkansas	25	25	72	70	1,800	1,750	100	92	1,800	1,610
Montana	36	37	140	165	5,040	6,105	67	40	3,377	2,442
Wyoming	12	11	140	140	1,680	1,540	65	60	1,092	924
Colorado	80	85	115	95	9,200	8,075	65	41	5,980	3,311
New Mexico	9	9	68	100	612	900	140	65	857	585
Arizona	1	1	75	125	75	125	135	125	101	156
Utah	20	19	180	185	3,600	3,515	58	49	2,088	1,722
Nevada	11	12	160	178	1,760	2,136	68	60	1,197	1,282
Idaho	34	35	170	185	5,780	6,475	50	29	2,890	1,878
Washington	60	68	123	167	7,380	11,356	60	36	4,428	4,088
Oregon	50	65	135	155	6,750	10,075	58	31	3,915	3,123
California	68	78	119	130	8,092	10,140	70	65	5,664	6,591
United States	3,668	3,711	90.4	113.4	331,525	420,647	68.7	50.5	227,903	212,550

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*Statistics by counties, showing acreage, average yield and total yield of Iowa farm crops compiled by the Iowa Department of Agriculture from reports received, as required by Chapter 86, Section 1, Acts of the Thirty-third General Assembly, will be found in part 3 of this year book.

SWEET POTATOES.

States	Acreage (000 omitted)		Yield per acre		Total production (000 omitted)		Price per bushel Dec. 1 to prod'c'rs		Value based on prices Dec. 1 to producers (000 omitted)	
	1913	1912	1913	1912	1913	1912	1913	1912	1913	1912
	Acres	Acres	Bu.	Bu.	Bu	Bu.	Cts.	Cts.	Dolls.	Dolls.
New Jersey	23	23	138	120	3,174	2,760	78	84	2,476	2,318
Pennsylvania	1	1	110	120	110	120	90	75	99	90
Delaware	5	5	135	120	675	600	60	68	405	408
Maryland	8	8	141	125	1,128	1,000	60	63	677	630
Virginia	33	33	108	90	3,564	2,970	70	75	2,495	2,228
West Virginia	2	2	91	115	182	230	100	90	182	207
North Carolina	80	75	100	90	8,000	6,750	61	62	4,880	4,185
South Carolina	50	48	92	105	4,600	5,040	75	68	3,450	3,427
Georgia	83	81	87	90	7,221	7,290	68	66	4,910	4,811
Florida	21	21	110	112	2,310	2,352	75	73	1,732	1,717
Ohio	1	1	90	118	90	118	106	87	95	103
Indiana	1	1	78	116	78	116	103	89	80	103
Illinois	8	8	70	98	560	784	106	95	594	745
*Iowa	2	2	80	90	160	180	150	108	240	194
Missouri	6	6	56	88	336	528	105	95	353	502
Kansas	5	5	50	99	250	495	110	103	275	510
Kentucky	9	9	75	90	675	810	94	85	634	688
Tennessee	20	20	80	90	1,600	1,800	80	72	1,280	1,296
Alabama	70	62	95	100	6,650	6,200	67	71	4,456	4,402
Mississippi	55	52	98	97	5,390	5,044	62	62	3,342	3,127
Louisiana	60	56	85	84	5,100	4,704	70	65	3,570	3,058
Texas	50	36	80	75	4,000	2,700	95	104	3,800	2,808
Oklahoma	6	4	64	92	384	368	104	109	399	401
Arkansas	20	18	90	88	1,800	1,584	80	90	1,440	1,426
California	6	6	170	156	1,020	936	100	94	1,020	880
United States	625	583	92.5	95.2	59,057	55,479	72.6	72.6	42,884	40,264

*Statistics by counties, showing acreage, average yield and total yield of Iowa farm crops compiled by the Iowa Department of Agriculture from reports received, as required by Chapter 86, Section 1, Acts of the Thirty-third General Assembly, will be found in part 3 of this year book.

FLAXSEED.

States	Acreage (000 omitted)		Yield per acre		Total production (000 omitted)		Price per bushel Dec. 1 to producers		Value based on prices Dec. 1 to producers (000 omitted)	
	1913	1912	1913	1912	1913	1912	1913	1912	1913	1912
	Acres	Acres	Bu.	Bu.	Bu.	Bu.	Dolls.	Dolls.	Dolls.	Dolls.
Wisconsin	9	10	14.0	12.5	126	125	1.23	1.27	155	159
Minnesota	350	404	9.0	10.2	3,150	4,121	1.23	1.20	3,874	4,945
*Iowa	28	35	9.4	11.5	263	402	1.23	1.24	323	498
Missouri	10	12	5.0	6.0	50	72	1.15	1.10	58	79
North Dakota	1,000	1,246	7.2	9.7	7,200	12,086	1.21	1.14	8,712	13,778
South Dakota	425	619	7.2	8.6	3,060	5,323	1.20	1.13	3,672	6,015
Nebraska	9	2	6.0	9.5	54	19	1.10	1.28	59	24
Kansas	50	50	6.0	6.0	300	300	1.16	1.30	348	390
Oklahoma	-----	1	------	9.0	-------	9	-------	1.38	---------	12
Montana	400	460	9.0	12.0	3,600	5,520	1.15	1.12	4,140	6,182
Colorado	10	12	5.0	8.0	50	96	1.15	1.25	58	120
United States	2,291	2,851	7.8	9.8	17,853	28,073	1.20	1.15	21,399	32,202

*Statistics by counties, showing acreage, average yield and total yield of Iowa farm crops compiled by the Iowa Department of Agriculture from reports received, as required by Chapter 86, Section 1, Acts of the Thirty-third General Assembly, will be found in part 3 of this year book.

BUCKWHEAT.

States	Acreage (000 omitted)		Yield per acre		Total production (000 omitted)		Price per bushel Dec. 1 to prod'c'rs		Value based on prices Dec. 1 to producers (000 omitted)	
	1913	1912	1913	1912	1913	1912	1913	1912	1913	1912
	Acres	Acres	Bu.	Bu.	Bu.	Bu.	Cts.	Cts.	Dolls.	Dolls.
Maine	14	14	30.0	29.4	420	412	63	70	265	288
New Hampshire	1	1	31.0	31.0	31	31	66	72	20	22
Vermont	8	8	25.0	30.0	200	240	80	72	160	173
Massachusetts	2	2	17.0	21.0	34	42	80	85	27	36
Connecticut	3	3	17.0	20.5	51	62	95	88	48	55
New York	280	277	14.3	23.8	4,004	6,593	81	64	3,243	4,220
New Jersey	10	12	22.0	22.0	220	264	76	72	167	190
Pennsylvania	285	288	18.2	25.7	5,180	7,405	73	64	3,781	4,739
Delaware	3	4	17.0	19.0	51	76	69	55	35	42
Maryland	11	11	16.5	19.0	182	209	75	71	136	149
Virginia	26	24	[illegible]	21.5	[illegible]	516	80	75	[illegible]	387
West Virginia	38	37	21.0	24.0	798	888	78	75	622	666
North Carolina	9	10	19.2	17.5	173	175	78	85	135	149
Ohio	18	21	18.0	20.0	324	420	76	[illegible]	246	[illegible]
Indiana	6	6	15.5	16.0	93	96	75	73	69	69
Illinois	4	4	17.0	22.0	68	88	80	80	54	70
Michigan	47	62	17.0	17.5	800	1,085	79	65	630	705
Wisconsin	18	17	16.5	17.5	297	298	69	64	205	191
Minnesota	6	6	[illegible]	21.0	[illegible]	126	64	65	[illegible]	82
Iowa	6	7	14.0	19.0	84	133	81	75	68	100
Missouri	2	2	11.0	15.0	22	30	85	95	19	28
Nebraska	1	1	20.0	18.0	20	18	78	90	16	16
Kansas	1	1	10.0	16.0	10	16	80	75	8	12
Tennessee	3	3	15.0	18.0	45	54	75	78	34	42
United States	805	841	17.2	22.9	13,833	19,249	75.5	66.1	10,445	12,720

*Statistics by counties, showing acreage, average yield and total yield of Iowa farm crops compiled by the Iowa Department of Agriculture from reports received, as required by Chapter 86, Section 1, Acts of the Thirty-third General Assembly, will be found in part 6 of this year book.

WINTER WHEAT AND RYE.

Estimates of acreage planted autumn, 1913, and condition Dec. 1st, with comparisons.

States	Winter Wheat						Rye					
	Area Sown			Condition Dec. 1			Area Sown			Condition Dec. 1		
	Autumn 1912, revised (000 omitted)	Autumn 1913 Compared with 1912	Autumn 1913 Total preliminary (000 omitted)	1913	1912	10 year average	Autumn 1912, revised (000 omitted)	Autumn 1913 Compared with 1912	Autumn 1913 Total preliminary (000 omitted)	1913	1912	10 year average
	Acres	%	Acres	%	%	%	Acres	%	Acres	%	%	%
Vermont	------	------	------	------	------	------	1	101	1	[illegible]	[illegible]	[illegible]
Massachusetts	------	------	------	------	------	------	4	101	4	[illegible]	[illegible]	[illegible]
Connecticut	------	------	------	------	------	------	[illegible]	102	[illegible]	[illegible]	[illegible]	[illegible]
New York	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
New Jersey	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	101	79	[illegible]	[illegible]	[illegible]
Pennsylvania	[illegible]	101	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Delaware	[illegible]	[illegible]	116	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Maryland	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Virginia	[illegible]	[illegible]	[illegible]	[illegible]	92	[illegible]	[illegible]	[illegible]	85	[illegible]	[illegible]	[illegible]
West Virginia	249	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
North Carolina	621	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	54	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
South Carolina	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	97	[illegible]	[illegible]
Georgia	144	100	144	93	94	92	14	100	14	[illegible]	[illegible]	[illegible]
Ohio	[illegible]	105	2,115	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Indiana	[illegible]	113	2,515	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Illinois	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Michigan	[illegible]	100	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	95	91	91
Wisconsin	91	[illegible]	[illegible]	[illegible]	[illegible]	94	447	[illegible]	447	[illegible]	[illegible]	[illegible]
Minnesota	[illegible]	[illegible]	45	92	------	------	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Iowa	[illegible]	105	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	97	[illegible]	[illegible]
Missouri	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	115	[illegible]	[illegible]	[illegible]	[illegible]
North Dakota	------	------	------	------	------	------	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
South Dakota	[illegible]	[illegible]	[illegible]	[illegible]	------	------	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Nebraska	3,159	[illegible]	[illegible]	[illegible]	96	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Kansas	[illegible]	111	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Kentucky	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Tennessee	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Alabama	[illegible]	100	34	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Mississippi	1	[illegible]	1	91	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Texas	576	[illegible]	1,139	[illegible]	[illegible]	[illegible]	------	------	------	------	------	------
Oklahoma	[illegible]	[illegible]	2,541	[illegible]	92	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Arkansas	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Montana	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Wyoming	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Colorado	211	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
New Mexico	41	110	45	98	[illegible]	------	------	------	------	------	------	------
Arizona	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	------	------	------	------	------	------	------
Utah	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Nevada	[illegible]	[illegible]	19	[illegible]	[illegible]	[illegible]	------	------	------	------	------	------
Idaho	[illegible]	106	346	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Washington	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Oregon	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
California	[illegible]	100	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	96	11	[illegible]	[illegible]	[illegible]
United States	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible] by counties, showing acreage, average yield and total yield of Iowa farm crops compiled by the Iowa Department of Agriculture from reports received, as required by Chapter [illegible], Section [illegible], Acts of the Thirty-third General Assembly, will be found in part I of this year book.

HORSES.

Estimated number on farms of the United States and value, Jan. 1, 1914, with comparisons, by States.

Figures taken from Bulletin 575, published by United States Department of Agriculture, Feb. 7, 1914.

States	Number (000 omitted)				Value per head, Jan. 1			Total value, Jan. 1 (000 omitted)		
	Jan. 1, 1914 (est.)		Jan. 1 1913 (est.)	Apr. 15, 1910 (census)	1914	1913	1910	1914	1913	1910[2]
	Per ct.[1]	Total								
Maine	111	111	110	108	$150.00	$139.00	$125.00	$16,650	$15,290	$13,500
New Hampshire	102	47	46	46	137.00	123.00	106.00	6,439	5,658	4,876
Vermont	105	88	84	81	129.00	127.00	106.00	11,352	10,668	8,586
Massachusetts	101	65	64	64	161.00	146.00	128.00	10,465	9,344	8,192
Rhode Island	103	10	10	9	156.00	144.00	129.00	1,560	1,440	1,161
Connecticut	100	47	47	46	153.00	141.00	126.00	7,191	6,627	5,796
New York	101	615	609	591	145.00	137.00	125.00	89,175	83,433	73,875
New Jersey	101	91	90	89	157.00	147.00	134.00	14,287	13,230	11,926
Pennsylvania	101	584	578	550	139.00	133.00	132.00	81,176	76,874	72,600
Delaware	102	35	34	33	106.00	102.00	106.00	3,710	3,468	3,498
Maryland	101	165	163	156	119.00	116.00	108.00	19,635	18,908	16,848
Virginia	103	350	340	330	114.00	106.00	107.00	39,900	36,040	35,310
West Virginia	103	190	184	180	122.00	116.00	112.00	23,180	21,344	20,160
North Carolina	102	180	176	166	139.00	128.00	121.00	25,020	22,528	20,086
South Carolina	102	85	83	80	144.00	140.00	127.00	12,240	11,620	10,160
Georgia	102	128	125	120	131.00	123.00	125.00	16,768	15,375	15,000
Florida	104	55	53	46	122.00	118.00	109.00	6,710	6,254	5,014
Ohio	101	901	892	910	132.00	130.00	129.00	118,932	115,960	117,390
Indiana	101	854	846	814	116.00	117.00	122.00	99,064	98,982	99,308
Illinois	101	1,497	1,482	1,453	113.00	120.00	124.00	169,161	177,840	180,172
Michigan	102	653	640	610	139.00	137.00	126.00	90,767	87,680	76,860
Wisconsin	102	678	665	615	136.00	131.00	121.00	92,208	87,115	74,415
Minnesota	103	847	822	753	125.00	123.00	111.00	105,875	101,106	83,583
Iowa	101	1,584	1,568	1,492	118.00	120.00	120.00	186,912	188,160	179,040
Missouri	101	1,095	1,084	1,073	98.00	101.00	103.00	107,310	109,484	110,519
North Dakota	105	748	712	651	112.00	124.00	114.00	83,776	88,288	74,214
South Dakota	104	730	702	669	96.00	105.00	105.00	70,080	73,710	70,245
Nebraska	102	1,048	1,027	1,008	94.00	101.00	108.00	98,512	103,727	108,864
Kansas	101	1,110	1,099	1,147	93.00	103.00	107.00	103,230	113,197	122,729
Kentucky	100	443	443	443	103.00	104.00	105.00	45,629	46,072	46,515
Tennessee	99	346	350	350	116.00	115.00	112.00	40,136	40,250	39,200
Alabama	102	149	146	136	113.00	106.00	95.00	16,837	15,476	12,920
Mississippi	102	241	236	216	95.00	92.00	85.00	22,895	21,712	18,360
Louisiana	102	191	187	181	85.00	87.00	79.00	16,235	16,269	14,299
Texas	103	1,216	1,181	1,170	80.00	82.00	73.00	97,280	96,842	85,470
Oklahoma	101	766	758	743	85.00	84.00	81.00	65,110	63,672	60,183
Arkansas	101	273	270	255	93.00	89.00	82.00	25,389	24,030	20,910
Montana	105	372	354	316	102.00	93.00	80.00	37,944	32,922	25,280
Wyoming	109	171	157	156	79.00	76.00	83.00	13,509	11,932	12,948
Colorado	105	340	324	294	83.00	87.00	85.00	28,220	28,188	24,990
New Mexico	103	197	191	179	55.00	58.00	47.00	10,835	11,078	8,413
Arizona	104	112	108	100	73.00	78.00	62.00	8,176	8,424	6,200
Utah	104	140	135	116	91.00	93.00	85.00	12,740	12,555	9,860
Nevada	102	76	75	68	78.00	87.00	78.00	5,928	6,525	5,304
Idaho	105	234	223	198	96.00	100.00	102.00	22,464	22,300	20,196
Washington	102	305	299	281	106.00	110.00	108.00	32,330	32,890	30,348
Oregon	103	301	292	272	96.00	99.00	103.00	28,896	28,908	28,016
California	99	498	503	469	100.00	109.00	105.00	49,800	54,827	49,245
United States	101.9	20,962	20,567	19,833	109.32	110.77	108.03	2,291,638	2,278,222	2,142,524

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[1] Compared with Jan. 1, 1913.

[2] Based on Census numbers on Apr. 15 and the Department of Agriculture's estimated farm value per head Jan. 1, 1910.

*Statistics by counties, showing total figures on live stock compiled by the Iowa Department of Agriculture, from reports received as required by Chapter 86, Section 1, Acts of the Thirty-third General Assembly, will be found in part 3 of this year book.

MULES.

Estimated number on farms of the United States, and value, Jan. 1, 1914, with comparisons, by States.
Figures from Bulletin 575, U. S. Dept. of Agriculture, Feb. 7, 1914.

States	Number (000 omitted)				Value per head Jan. 1			Total value Jan. 1 (000 omitted)		
	Jan. 1, 1914 (est.)		Jan. 1 1913 (est.)	Apr. 15, 1910 (census)	1914	1913	1910	1914	1913	1910[2]
	Per ct.[1]	Total								
Maine	------	------	------	------	------	------	------	------	------	------
New Hampshire	------	------	------	------	------	------	------	------	------	------
Vermont	------	------	------	------	------	------	------	------	------	------
Massachusetts	------	------	------	------	------	------	------	------	------	------
Rhode Island	------	------	------	------	------	------	------	------	------	------
Connecticut	------	------	------	------	------	------	------	------	------	------
New York	102	4	4	4	$154.00	$157.00	$132.00	$ 616	$ 628	$ 528
New Jersey	102	4	4	4	177.00	169.00	155.00	708	676	620
Pennsylvania	102	45	44	44	148.00	149.00	145.00	6,660	6,556	6,380
Delaware	103	6	6	6	126.00	125.00	125.00	756	750	750
Maryland	103	24	23	23	143.00	142.00	130.00	3,432	3,266	2,990
Virginia	102	61	60	60	136.00	128.00	130.00	8,296	7,680	7,800
West Virginia	100	12	12	12	131.00	126.00	120.00	1,572	1,512	1,440
North Carolina	103	192	186	175	160.00	148.00	137.00	30,720	27,528	23,975
South Carolina	102	171	168	156	167.00	171.00	158.00	28,557	28,728	24,648
Georgia	103	319	310	295	161.00	151.00	157.00	51,359	46,810	46,315
Florida	104	27	26	23	168.00	152.00	155.00	4,536	3,952	3,565
Ohio	100	24	24	23	132.00	131.00	125.00	3,168	3,144	2,875
Indiana	102	86	84	82	121.00	122.00	126.00	10,406	10,248	10,332
Illinois	99	148	149	148	121.00	131.00	131.00	17,908	19,519	19,383
Michigan	102	4	4	4	133.00	139.00	122.00	532	556	488
Wisconsin	100	3	3	3	135.00	131.00	115.00	405	393	345
Minnesota	102	6	6	6	134.00	128.00	114.00	804	768	684
*Iowa	102	57	56	56	123.00	124.00	123.00	7,011	6,944	6,888
Missouri	100	326	326	343	112.00	117.00	119.00	36,512	38,142	40,817
North Dakota	103	8	8	8	130.00	141.00	130.00	1,040	1,128	1,049
South Dakota	102	14	14	12	110.00	118.00	121.00	1,540	1,652	1,452
Nebraska	100	84	84	83	105.00	112.00	119.00	8,820	9,400	9,877
Kansas	100	222	222	208	105.00	114.00	116.00	23,310	25,308	24,128
Kentucky	100	229	229	225	118.00	120.00	118.00	27,022	27,480	26,550
Tennessee	98	270	276	276	127.00	129.00	123.00	34,290	35,604	33,948
Alabama	103	278	270	247	135.00	131.00	122.00	37,530	35,370	30,134
Mississippi	102	286	280	256	115.00	114.00	113.00	32,890	31,920	28,928
Louisiana	99	132	133	132	128.00	127.00	116.00	16,896	16,891	15,312
Texas	104	753	724	676	109.00	110.00	99.00	82,077	79,640	66,924
Oklahoma	100	269	269	257	104.00	107.00	105.00	27,976	28,783	26,985
Arkansas	101	235	233	222	114.00	115.00	109.00	26,790	26,795	24,198
Montana	101	4	4	4	106.00	109.00	102.00	424	436	408
Wyoming	105	2	2	2	113.00	109.00	106.00	226	218	212
Colorado	102	17	17	15	101.00	104.00	105.00	1,717	1,768	1,575
New Mexico	100	15	15	15	92.00	90.00	79.00	1,380	1,350	1,185
Arizona	111	6	5	4	144.00	119.00	108.00	864	595	432
Utah	100	2	2	2	82.00	92.00	80.00	164	184	160
Nevada	110	3	3	3	79.00	95.00	79.00	237	285	237
Idaho	104	4	4	4	103.00	108.00	116.00	412	432	464
Washington	103	14	14	12	116.00	117.00	121.00	1,624	1,638	1,452
Oregon	104	10	10	10	107.00	107.00	108.00	1,070	1,070	1,080
California	100	73	73	70	120.00	130.00	122.00	8,760	9,490	8,540
United States	101.4	4,449	4,386	4,210	123.85	124.31	120.20	551,017	545,245	506,049

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[1] Compared with Jan. 1, 1913.

[2] Based on Census numbers on Apr. 15 and the Department of Agriculture's estimated farm value per head Jan. 1, 1910.

*Statistics by counties, showing total figures on live stock compiled by the Iowa Department of Agriculture, from reports received as required by Chapter 86, Section 1, Acts of the Thirty-third General Assembly, will be found in part 3 of this year book.

CATTLE OTHER THAN MILCH COWS.

Estimated number on farms of the United States, and value, Jan. 1, 1914, with comparisons, by States.

Figures from Bulletin 575, U. S. Dept. of Agriculture, Feb. 7, 1914.

States	Number (000 omitted)				Value per head, Jan. 1			Total value Jan. 1 (000 omitted)		
	Jan 1, 1914 (est.)		Jan. 1, 1913 (est.)	Apr. 15, 1910 (census)	1914	1913	1910	1914	1913	1910[2]
	Per cent[1]	Total								
Maine	101	100	99	100	$23.40	$21.20	$16.90	$ 2,340	$ 2,099	$ 1,690
New Hampshire	99	65	66	67	26.80	24.00	20.30	1,742	1,584	1,360
Vermont	98	165	168	165	21.10	18.30	14.40	3,482	3,074	2,376
Massachusetts	101	82	81	80	23.10	19.90	16.70	1,894	1,612	1,336
Rhode Island	100	11	11	11	28.10	20.60	17.50	309	227	192
Connecticut	101	72	71	72	27.90	22.50	19.10	2,009	1,598	1,375
New York	100	876	876	913	27.20	22.00	18.20	23,827	19,272	16,617
New Jersey	103	68	66	69	30.50	25.10	21.40	2,074	1,657	1,477
Pennsylvania	103	632	614	653	28.30	23.60	19.20	17,886	14,490	12,538
Delaware	101	19	19	19	29.20	23.80	21.00	555	452	399
Maryland	99	119	120	121	29.40	24.60	21.10	3,499	2,952	2,553
Virginia	98	450	459	503	27.60	23.20	19.40	12,420	10,649	9,758
West Virginia	100	331	331	380	35.90	29.00	22.50	11,883	9,599	8,550
North Carolina	98	365	372	392	17.30	14.90	12.50	6,314	5,543	4,900
South Carolina	98	211	215	209	14.90	14 20	12.00	3,144	3,053	2,508
Georgia	99	660	667	674	12.70	11.00	10.30	8,382	7,337	6,942
Florida	96	735	766	729	13.70	12.20	10.30	10,070	9,345	7,509
Ohio	103	838	814	933	35.40	29.80	24.10	29,665	24,257	22,485
Indiana	103	707	686	729	33.90	30.10	24.50	23,967	20,649	17,860
Illinois	99	1,216	1,228	1,391	35.90	31.50	26.40	43,654	38,682	36,722
Michigan	101	680	673	731	28.10	22.10	18.50	19,108	14,873	13,524
Wisconsin	102	1,158	1,135	1,207	27.10	21.70	16.40	31,382	24,630	19,795
Minnesota	103	1,173	1,139	1,262	24.30	20.00	14.30	28,504	22,780	18,047
*Iowa	98	2,555	2,607	3,041	39.20	33.00	22.20	100,156	86,031	67,510
Missouri	96	1,386	1,444	1,705	36.10	31 1	22.60	50,035	44,908	38,533
North Dakota	107	468	437	485	34.60	27.20	20.50	16,193	11,886	9,942
South Dakota	102	912	894	1,165	39.50	32.30	21.50	36,024	28,876	25,048
Nebraska	99	1,883	1,902	2,318	38.10	32.40	21.90	71,742	61,625	50,764
Kansas	88	1,565	1,778	2,343	36.90	33 40	23.70	57,748	59,385	55,529
Kentucky	95	527	555	591	28.80	25 90	19.90	15,178	14,374	11,761
Tennessee	94	498	530	600	21.40	16.90	13.80	10,657	8,957	8,230
Alabama	96	514	535	540	12.00	10.10	9.00	6,168	5,404	4,860
Mississippi	94	490	521	583	13.50	10.40	8.40	6,615	5,418	4,897
Louisiana	101	448	444	526	15.30	12.00	10.30	6,854	5,328	5,418
Texas	103	5,173	5,022	5,921	26.50	22.60	15 30	137,084	113,497	90,591
Oklahoma	95	1,097	1,155	1,423	33.40	27.60	19.20	36,640	31,878	27,322
Arkansas	95	475	500	602	15.80	12.20	9.00	7,505	6,100	5,418
Montana	105	753	717	866	46.40	38.40	27.40	34,939	27,533	23,728
Wyoming	108	546	506	734	49.40	38.80	26.40	26,972	19,633	19,378
Colorado	103	949	921	983	40.00	34.10	23.00	37,960	31,406	22,609
New Mexico	103	918	891	1,031	32.70	29.00	17.40	30,019	25,839	17,939
Arizona	95	739	778	796	32.50	29.20	19.30	24,018	22,718	15,363
Utah	101	356	352	336	35.50	28.50	18.30	12,638	10,032	6,149
Nevada	101	437	433	433	38.90	33.30	20.70	16,999	14,419	8,963
Idaho	104	354	340	368	41.20	33.50	21.40	14,585	11,390	7,875
Washington	107	199	186	216	35.70	30.50	19.90	7,101	5,673	4,298
Oregon	104	470	452	552	38.00	32.00	18.50	17,860	14,464	10,212
California	97	1,410	1,454	1,610	33.00	29.20	20.10	46,530	42,457	32,361
United States	99.5	35,855	36,030	41,178	31.13	26.36	19.07	1,116,333	949,645	785,261

[1] Compared with Jan. 1, 1913.

[2] Based on Census numbers on Apr. 15 and the Department of Agriculture's estimated farm value per head Jan. 1, 1910.

*Statistics by counties, showing total figures on live stock compiled by the Iowa Department of Agriculture, from reports received as required by Chapter 86, Section 1, Acts of the Thirty-third General Assembly, will be found in part 3 of this year book.

MILCH COWS.

Estimated number on farms of the United States, and value, Jan. 1, 1914, with comparisons, by States.

Figures from Bulletin 575, U. S. Dept. of Agriculture, Feb. 7, 1914.

States	Number (000 omitted)				Value per head, Jan. 1			Total value Jan. 1 (000 omitted)		
	Jan. 1, 1914 (est.)		Jan. 1, 1913 (est.)	Apr. 15 1910 (census)	1914	1913	1910	1914	1913	1910[2]
	Per cent[1]	Total								
Maine	101	159	157	157	$47.50	$46.00	$33.00	$ 7,552	$ 7,222	$ 5,181
New Hampshire	100	96	96	101	53.50	48.00	36.20	5,136	4,608	3,656
Vermont	100	265	265	265	47.50	44.50	34.20	12,588	11,792	9,063
Massachusetts	98	162	165	172	59.00	51.00	42.00	9,558	8,415	7,224
Rhode Island	99	23	23	23	70.00	52.50	43.80	1,610	1,208	1,007
Connecticut	102	120	118	123	58.00	51.70	41.00	6,960	6,101	5,043
New York	100	1,465	1,465	1,510	57.00	50.00	39.50	83,505	73,250	59,645
New Jersey	100	146	146	154	67.00	55.20	47.50	9,782	8,059	7,315
Pennsylvania	100	943	943	934	58.40	46.60	39.00	55,071	43,944	36,426
Delaware	103	39	38	36	52.00	42.20	38.00	2,028	1,604	1,368
Maryland	101	170	168	167	53.80	42.60	37.30	9,146	7,157	6,229
Virginia	99	342	345	356	42.00	34.00	29.70	14,364	11,730	10,573
West Virginia	101	232	230	240	50.00	42.00	35.00	11,600	9,660	8,400
North Carolina	99	309	312	309	35.10	30.10	25.50	10,846	9,391	7,880
South Carolina	100	185	185	181	34.20	32.50	28.90	6,327	6,012	5,231
Georgia	100	402	402	406	31.30	28.50	25.00	12,583	11,457	10,150
Florida	104	128	123	116	38.00	36.00	32.50	4,864	4,428	3,770
Ohio	102	886	869	905	60.00	50.00	42.80	53,160	43,450	38,734
Indiana	101	640	634	634	53.90	45.70	41.00	34,496	28,974	25,994
Illinois	101	1,017	1,007	1,050	58.20	51.00	42.80	59,189	51,357	44,940
Michigan	100	798	798	767	59.70	45.00	39.50	47,641	35,910	30,296
Wisconisn	103	1,549	1,504	1,473	59.90	47.70	36.60	92,785	71,741	53,912
Minnesota	103	1,163	1,129	1,085	55.00	45.00	33.00	63,965	50,805	35,805
*Iowa	101	1,350	1,337	1,407	60.50	50.30	36.00	81,675	67,251	50,652
Missouri	100	789	789	856	54.00	45.30	34.80	42,606	35,742	29,789
North Dakota	110	305	277	259	59.00	47.00	33.90	17,995	13,019	8,780
South Dakota	109	419	384	370	61.00	48.00	33.00	25,559	18,432	12,210
Nebraska	101	613	607	614	60.70	49.60	35.00	37,209	30,107	21,490
Kansas	100	698	698	736	57.50	49.20	36.90	40,135	34,342	27,158
Kentucky	98	382	390	410	44.50	38.80	32.70	16,999	15,132	13,407
Tennessee	95	348	366	397	41.40	33.10	27.50	14,407	12,115	10,918
Alabama	98	388	396	392	32.40	27.00	23.00	12,571	10,692	9,016
Mississippi	97	421	434	430	34.00	27.70	23.50	14,314	12,022	10,105
Louisiana	97	263	271	279	34.00	29.00	24.30	8,942	7,859	6,780
Texas	103	1,065	1,034	1,014	45.60	39.90	29.50	48,564	41,257	29,913
Oklahoma	100	484	484	531	50.30	43.00	31.50	24,345	20,812	16,726
Arkansas	96	376	392	426	37.50	28.60	22.00	14,100	11,211	9,372
Montana	110	104	95	77	70.50	61.00	46.50	7,332	5,795	3,580
Wyoming	114	41	36	33	74.50	58.00	43.70	3,054	2,088	1,442
Colorado	108	186	172	145	63.00	53.80	41.00	11,718	9,254	5,945
New Mexico	110	62	56	51	55.00	47.80	38.80	3,410	2,677	1,979
Arizona	108	37	34	29	64.00	58.00	43.00	2,368	1,972	1,247
Utah	103	88	85	76	49.00	49.00	34.00	5,192	4,165	2,584
Nevada	108	22	20	17	65.10	52.00	44.00	1,432	1,040	748
Idaho	110	112	102	86	69.80	59.60	41.40	7,818	6,079	3,560
Washington	107	234	219	186	74.00	62.50	41.80	17,316	13,688	7,775
Oregon	105	196	187	173	65.00	56.00	39.60	12,740	10,472	6,851
California	101	515	510	467	62.00	53.50	38.40	31,930	27,285	17,933
United States	101.2	20,737	20,497	20,625	53.94	45.02	35.29	1,118,487	922,783	727,802

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[1] Compared with Jan. 1, 1913.

[2] Based on Census numbers on Apr. 15 and the Department of Agriculture's estimated farm value per head Jan. 1, 1910.

*Statistics by counties, showing total figures on live stock compiled by the Iowa Department of Agriculture, from reports received as required by Chapter 86, Section 1, Acts of the Thirty-third General Assembly, will be found in part 3 of this year book.

SWINE.

Estimated number on farms of the United States, and value, Jan. 1, 1914, with comparisons, by States.
Figures from Bulletin 575, U. S. Dept. of Agriculture, Feb. 7, 1914.

State	Number (000 omitted)				Value per head Jan. 1			Total value, Jan. 1 (000 omitted)		
	Jan. 1, 1914 (est.)		Jan. 1 1913 (est.)	Apr. 15, 1910 (census)	1914	1913	1910	1914	1913	1910[2]
	Per ct.[1]	Total								
Maine	96	97	101	87	$15.80	$12.90	$11.50	$ 1,533	$ 1,303	$ 1,000
New Hampshire	98	51	52	45	14.80	12.70	11.50	755	660	518
Vermont	99	106	107	95	14.10	12.20	10.00	1,495	1,305	950
Massachusetts	92	106	115	103	14.50	13.00	11.50	1,537	1,495	1,184
Rhode Island	100	14	14	14	15.20	14.50	12.50	213	203	175
Connecticut	99	57	58	52	16.30	14.00	12.50	929	812	650
New York	99	753	761	666	14.50	12.60	11.50	10,918	9,589	7,659
New Jersey	99	158	160	147	13.60	13.00	12.00	2,149	2,080	1,764
Pennsylvania	100	1,130	1,130	978	13.80	12.50	9.50	15,594	14,125	9,291
Delaware	100	58	58	49	10.30	11.20	8.70	597	650	426
Maryland	99	332	335	302	10.50	9.80	8.90	3,486	3,283	2,688
Virginia	104	869	836	798	8.30	7.00	6.50	7,213	5,852	5,187
West Virginia	103	367	356	328	10.10	9.00	7.70	3,707	3,204	2,526
North Carolina	102	1,362	1,335	1,228	9.00	7.70	7.20	12,258	10,280	8,842
South Carolina	102	780	765	665	9.10	8.50	7.20	7,098	6,502	4,788
Georgia	103	1,945	1,888	1,784	8.20	7.10	7.00	15,949	13,405	12,488
Florida	103	904	878	810	6.00	5.90	4.80	5,424	5,180	3,888
Ohio	102	3,467	3,399	3,106	11.30	10.80	10.70	39,177	36,709	33,234
Indiana	107	3,969	3,709	3,614	10.30	9.80	10.00	40,881	36,348	36,140
Illinois	101	4,358	4,315	4,686	10.80	10.50	10.90	47,066	45,308	51,077
Michigan	100	1,313	1,313	1,246	12.30	10.80	10.50	16,150	14,180	13,083
Wisconsin	101	2,050	2,030	1,809	13.00	11.60	11.80	26,650	23,548	21,346
Minnesota	84	1,430	1,702	1,520	14.00	12.70	11.50	20,020	21,615	17,480
*Iowa	80	6,976	8,720	7,546	12.60	12.00	11.30	87,898	104,640	85,270
Missouri	104	4,250	4,087	4,438	8.50	8.50	7.90	36,125	34,740	35,060
North Dakota	117	428	366	332	13.20	13.70	11.00	5,650	5,014	3,652
South Dakota	88	1,039	1,181	1,010	11.30	11.00	11.10	11,741	12,991	11,211
Nebraska	85	3,228	3,798	3,436	11.80	11.40	11.00	38,090	43,297	37,796
Kansas	90	2,350	2,611	3,000	10.00	10.40	10.00	23,500	27,154	30,000
Kentucky	92	1,507	1,638	1,492	7.70	7.10	6.80	11,604	11,630	10,146
Tennessee	93	1,390	1,495	1,388	8.50	7.40	6.50	11,815	11,063	9,022
Alabama	102	1,485	1,456	1,267	8.50	6.80	6.00	12,622	9,901	7,602
Mississippi	99	1,467	1,482	1,292	8.10	6.90	5.50	11,883	10,226	7,106
Louisiana	99	1,398	1,412	1,328	8.00	7.00	5.50	11,184	9,884	7,304
Texas	105	2,618	2,493	2,336	8.60	8.40	6.60	22,515	20,941	15,418
Oklahoma	102	1,352	1,325	1,839	8.40	8.90	7.70	11,357	11,792	14,160
Arkansas	98	1,498	1,529	1,519	7.40	6.70	4.80	11,085	10,244	7,291
Montana	120	184	153	99	11.90	11.90	10.10	2,190	1,821	1,000
Wyoming	125	51	41	34	12.40	11.00	8.50	632	451	289
Colorado	100	205	205	179	10.50	11.00	9.50	2,152	2,255	1,700
New Mexico	108	56	52	46	10.10	9.60	8.50	566	499	391
Arizona	105	24	23	17	9.60	11.50	9.50	230	264	162
Utah	105	85	81	64	10.90	11.00	9.00	926	891	576
Nevada	104	33	32	23	12.60	11.00	9.00	416	352	207
Idaho	108	252	233	178	10.70	10.30	8.70	2,696	2,400	1,549
Washington	110	284	258	206	12.70	11.30	9.40	3,607	2,915	1,936
Oregon	112	300	268	218	11.00	9.50	8.20	3,300	2,546	1,788
California	97	797	822	767	10.50	9.20	8.20	8,368	7,562	6,289
United States	96.3	58,933	61,178	58,186	10.40	9.86	9.17	612,951	603,109	533,309

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[1] Compared with Jan. 1, 1913.

[2] Based on Census numbers on Apr. 15 and the Department of Agriculture's estimated farm value per head Jan. 1, 1910.

*Statistics by counties, showing total figures on live stock compiled by the Iowa Department of Agriculture, from reports received as required by Chapter 86, Section 1, Acts of the Thirty-third General Assembly, will be found in part 3 of this year book.

SHEEP.

Estimated number on farms of the United States, and value, Jan. 1, 1914, with comparisons, by States.

Figures from Bulletin 575, U. S. Dept. of Agriculture, Feb. 7, 1914.

States	Number (000 omitted)				Value per head Jan. 1			Total value Jan. 1 (000 omitted)		
	Jan. 1, 1914 (est.)		Jan. 1, 1913 (est.)	Apr. 15 1910 (census)	1914	1913	1910	1914	1913	1910
	Per ct.[1]	Total								
Maine	95	177	186	206	$4.30	$4.20	$3.70	$ 761	$ 781	$ 762
New Hampshire	92	39	42	44	4.40	4.90	3.70	172	206	163
Vermont	95	111	117	119	4.80	4.60	4.00	533	538	476
Massachusetts	90	31	34	33	5.30	4.80	4.20	164	163	139
Rhode Island	100	7	7	7	5.40	5.10	4.20	38	36	29
Connecticut	97	20	21	22	5.40	5.20	4.70	108	109	103
New York	100	875	875	930	5.40	5.00	5.00	4,725	4,375	4,650
New Jersey	99	31	31	31	5.60	5.30	5.20	174	164	161
Pennsylvania	97	839	865	883	4.90	5.00	4.80	4,111	4,325	4,238
Delaware	100	8	8	8	5.10	4.70	4.60	41	38	37
Maryland	99	223	225	237	5.00	4.60	4.70	1,115	1,035	1,114
Virginia	98	735	750	805	4.50	4.00	3.90	3,308	3,000	3,140
West Virginia	96	788	821	910	4.30	4.30	4.30	3,388	3,530	3,913
North Carolina	98	177	181	214	3.20	3.10	2.60	566	561	556
South Carolina	98	33	34	38	2.60	2.80	2.40	86	95	91
Georgia	98	166	169	188	2.10	1.90	2.20	349	321	414
Florida	99	118	119	114	1.90	2.10	2.00	224	250	228
Ohio	95	3,263	3,435	3,909	4.30	4.10	4.80	14,031	14,084	18,763
Indiana	94	1,238	1,317	1,337	4.90	4.60	5.20	6,066	6,058	6,952
Illinois	95	984	1,036	1,060	5.00	5.10	5.30	4,920	5,284	5,618
Michigan	99	2,118	2,139	2,306	4.60	4.30	4.70	9,743	9,198	10,838
Wisconsin	96	789	822	930	4.70	4.50	4.50	3,708	3,699	4,185
Minnesota	100	570	570	638	4.40	4.40	4.00	2,508	2,508	2,552
Iowa	100	1,249	1,249	1,146	5.30	5.10	5.30	6,620	6,370	6,074
Missouri	95	1,568	1,650	1,811	4.20	4.20	4.40	6,586	6,930	7,968
North Dakota	95	278	293	293	4.20	3.90	4.00	1,168	1,143	1,172
South Dakota	104	617	593	611	4.00	4.10	4.00	2,468	2,431	2,444
Nebraska	98	374	382	294	4.50	4.40	4.40	1,683	1,681	1,294
Kansas	100	316	316	272	4.50	4.60	4.70	1,422	1,454	1,278
Kentucky	96	1,267	1,320	1,363	4.20	4.00	4.00	5,321	5,280	5,452
Tennessee	95	688	724	795	3.40	3.10	3.40	2,339	2,244	2,703
Alabama	94	124	132	143	2.40	2.10	2.00	298	277	286
Mississippi	97	202	208	195	2.30	2.20	1.90	465	458	370
Louisiana	105	180	171	178	2.20	2.00	1.90	396	342	338
Texas	96	2,052	2,073	1,809	2.90	2.90	2.90	5,951	6,012	5,246
Oklahoma	105	75	71	62	4.00	3.60	3.30	300	256	205
Arkansas	95	124	130	144	2.60	2.40	2.30	322	312	331
Montana	84	4,293	5,111	5,381	3.70	3.70	4.20	15,884	18,911	22,600
Wyoming	100	4,472	4,472	5,397	4.10	4.10	4.40	18,335	18,335	23,747
Colorado	96	1,668	1,737	1,426	3.70	3.60	3.80	6,172	6,253	5,419
New Mexico	92	3,036	3,300	3,347	3.00	3.10	2.90	9,108	10,230	9,706
Arizona	102	1,601	1,570	1,227	3.60	3.70	3.70	5,764	5,809	4,540
Utah	99	1,970	1,990	1,827	3.90	4.10	4.10	7,683	8,159	7,491
Nevada	102	1,517	1,487	1,155	4.50	4.00	3.70	6,826	5,948	4,274
Idaho	101	2,981	2,951	3,011	4.20	4.00	4.70	12,520	11,804	14,152
Washington	101	506	501	476	4.40	4.20	3.90	2,226	2,104	1,856
Oregon	101	2,670	2,644	2,699	3.90	3.80	3.70	10,413	10,047	9,986
California	98	2,551	2,603	2,417	3.80	3.70	3.30	9,694	9,631	7,976
United States	96.6	49,719	51,482	52,448	4.04	3.94	4.12	200,803	202,779	216,030

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[1] Compared with Jan. 1, 1913.

[2] Based on Census numbers on Apr. 15 and the Department of Agriculture's estimated farm value per head Jan. 1, 1910.

*Statistics by counties, showing total figures on live stock compiled by the Iowa Department of Agriculture, from reports received as required by Chapter 86, Section 1, Acts of the Thirty-third General Assembly, will be found in part 3 of this year book.

WHEAT CROP OF COUNTRIES NAMED, 1911-1913.

Country	Area			Production		
	1911	1912	1913	1911	1912	1913
North America.	Acres.	Acres.	Acres.	Bushels.	Bushels.	Bushels.
United States	49,543,000	45,814,000	50,184,000	621,338,000	730,267,000	763,380,000
Canada:						
New Brunswick	13,000	------------	(1)	270,000	---------------	(1)
Ontario	941,000	------------	(1)	19,252,000	---------------	(1)
Manitoba	2,980,000	(1)	2,804,000	60,275,000	(1)	53,331,000
Saskatchewan	4,705,000	------------	5,720,000	97,665,000	---------------	121,559,000
Alberta	1,617,000	------------	1,512,000	36,143,000	---------------	34,372,000
Other	121,000	------------	979,000	2,313,000	---------------	22,455,000
Total Canada	10,377,000	10,997,000	11,015,000	215,918,000	224,159,000	213,717,000
Mexico	(1)	(1)	(1)	12,000,000	12,000,000	10,000,000
Total	------------	------------	------------	849,256,000	966,426,000	1,005,097,000
South America.						
Argentine	15,452,000	17,042,000	17,096,000	145,981,000	166,190,000	198,414,000
Chili	968,000	1,093,000	(1)	18,184,000	22,468,000	21,000,000
Uruguay	637,000	789,000	(1)	6,009,000	8,757,000	9,000,000
Total	------------	------------	------------	170,174,000	197,415,000	228,414,000
Europe.						
Austria-Hungary:						
Austria	3,003,000	3,114,000	2,998,000	58,865,000	69,712,000	60,123,000
Hungary proper	8,354,000	8,748,000	7,813,000	174,889,000	173,328,000	149,774,000
Croatia-Slavonia	808,000	833,000	837,000	15,188,000	11,314,000	16,899,000
Bosnia-Herzegovina	218,000	247,000	(1)	2,941,000	2,993,000	2,572,000
Total Austria-Hungary	12,383,000	12,942,000	------------	251,883,000	257,347,000	229,368,000
	Acres.	Acres.	Acres.	Bushels.	Bushels.	Bushels.
Belgium	399,000	(1)	(1)	15,745,000	15,348,000	15,012,000
Bulgaria	2,764,000	(1)	(1)	48,295,000	45,000,000	45,000,000
Denmark	[2] 100,000	(1)	(1)	4,466,000	3,604,000	4,463,000
Finland	(1)	(1)	(1)	125,000	130,000	130,000
France	15,897,000	16,328,000	16,169,000	315,126,000	336,284,000	321,571,000
Germany	4,878,000	4,759,000	4,878,000	149,411,000	160,224,000	171,075,000
Greece	(1)	(1)	(1)	8,000,000	7,000,000	7,000,000
Italy	11,741,000	11,751,000	11,842,000	192,395,000	165,720,000	214,405,000
Montenegro	(1)	(1)	(1)	200,000	200,000	200,000
Netherlands	142,000	143,000	140,000	5,511,000	5,604,000	4,773,000
Norway	[2] 12,000	(1)	(1)	271,000	332,000	300,000
Portugal	1,211,000	(1)	(1)	11,850,000	7,500,000	5,500,000
Roumania	4,769,000	5,114,000	4,011,000	93,724,000	88,924,000	83,236,000
Russia:						
Russia proper	52,557,000	------------	------------			
Poland	1,255,000	------------	------------	346,372,000	---------------	---------------
Northern Caucasia	9,908,000	------------	------------	24,129,000	---------------	---------------
				76,537,000	---------------	---------------
Total Russia (European)	63,720,000	[3]71,302,000	[3]74,512,000	447,038,000	[3]805,255,000	[3]962,587,000

Country	Area			Production		
	1911	1912	1913	1911	1912	1913
Servia	955,000	956,000	(1)	15,312,000	16,351,000	11,000,000
Spain	9,706,000	9,625,000	9,414,000	118,195,000	109,783,000	110,097,000
Sweden	251,000	(1)	(1)	7,945,000	7,832,000	7,800,000
Switzerland	(1)	(1)	(1)	3,524,000	3,178,000	3,500,000
Turkey (European)	(1)	(1)	(1)	20,000,000	18,000,000	18,000,000
United Kingdom:						
England	1,804,000	1,822,000	1,664,000	60,729,000	54,004,000	53,731,000
Wales	38,000	41,000	38,000	1,118,000	1,123,000	1,075,000
Scotland	64,000	62,000	60,000	2,786,000	2,471,000	2,335,000
Ireland	45,000	45,000	34,000	1,656,000	1,564,000	1,295,000
Total United Kingdom	1,951,000	1,970,000	1,736,000	66,289,000	59,162,000	58,436,000
Total	----------	----------	----------	1,805,605,000	2,112,778,000	2,273,483,000
Asia.						
British India, including such native states as report	30,565,000	31,141,000	29,569,000	375,629,000	370,515,000	358,388,000
Cyprus	(1)	(1)	(2)	2,394,000	2,071,000	2,100,000
Japanese Empire:						
Japan	1,223,000	1,216,000	1,226,000	25,645,000	26,514,000	27,000,000
Formosa	13,400	(1)	(1)	138,000	140,000	140,000
Total Japanese Empire	----------	----------	----------	25,783,000	26,654,000	27,140,000
Persia	(1)	(1)	(1)	16,000,000	16,000,000	16,000,000
Russia:						
Central Asia (4 governments of)	3,616,000	----------	----------	52,557,000	----------	----------
Siberia (4 governments of)	5,888,000	----------	----------	1,255,000	----------	----------
Transcaucasia (1 government of)	11,000	----------	----------	9,908,000	----------	----------
Total Russia (Asiatic)	9,515,000	(4)	(4)	63,720,000	(4)	(4)
Turkey (Asia Minor only)	(1)	(1)	(1)	35,000,000	35,000,000	35,000,000
Total	----------	----------	----------	518,526,000	450,240,000	438,628,000

[1] No data.
[2] Census of 1907.
[3] Includes 10 governments of Asiatic Russia.
[4] Included under total Russia (European).

Country	Area			Production		
	1911	1912	1913	1911	1912	1913
Africa.	Acres.	Acres.	Acres.	Bushels.	Bushels.	Bushels.
Algeria	3,554,000	3,614,000	3,448,000	35,874,000	27,172,000	36,848,000
Egypt	1,285,000	1,332,000	1,331,000	38,046,000	30,903,000	30,900,000
Tunis	1,401,000	1,263,000	1,235,000	8,635,000	4,225,000	5,500,000
Union of South Africa	(1)	(1)	(1)	6,034,000	[2] 6,034,000	[2] 6,034,000
Total				88,589,000	68,334,000	79,282,000
Australasia.						
Australia:						
Queensland	107,000	43,000	125,000	1,055,000	294,000	2,038,000
New South Wales	2,129,000	2,381,000	2,231,000	28,793,000	25,879,000	33,499,000
Victoria	2,398,000	2,164,000	2,085,000	35,910,000	21,550,000	27,050,000
South Australia	2,105,000	2,191,000	2,080,000	25,112,000	20,994,000	22,174,000
Western Australia	582,000	612,000	793,000	6,083,000	4,496,000	9,457,000
Tasmania	52,000	37,000	25,000	1,156,000	681,000	650,000
Total Australia	7,373,000	7,428,000	7,339,000	98,109,000	73,894,000	94,868,000
New Zealand	582,000	512,000	793,000	8,535,000	8,000,000	5,886,000
Total Australasia	7,695,000	7,643,000	7,529,000	106,644,000	81,894,000	100,754,000
Grand total				3,538,794,000	3,877,087,000	4,125,658,000

[1] No data.

[2] Census figures for the year 1911.

Note.—The above figures for European and Asiatic Russia include 72 governments only; the area and production in the whole Empire in 1911 were 80,086,000 acres and 563,485,000 bushels.

PART XIII.

Crop and Other Statistics for the Year Ending December 31 1913, Collected by Township Assessors.

Statistics on Iowa's crops and live stock as collected by the township assessors under provisions of Chapter 86, Acts of the Thirty-third General Assembly, are herewith presented. Every effort is made to get these statistics as accurate as possible but naturally there is some variation in these figures as compared to those shown by the Iowa Weather and Crop Service, whose reports are secured by estimates made by the crop reporters over the state. These statistics are gathered by the township assessors and turned in to the county auditor to tabulate them by counties and forward them to the office of the State Department of Agriculture.

Figures have been collected this year showing the hog cholera losses by counties during the year 1913. Considerable interest has been manifested in these figures inasmuch as the ravages of hog cholera this past year have been unusually heavy.

Table No. 1. Gives the total number, average size and total acreage of farms, total acreage occupied by farm buildings, public highways and feed lots, acreage in pasture, garden, orchard, crops not otherwise enumerated and land not utilized for any purpose. It also shows the total number of bushels of apples harvested and average monthly wage paid farm labor summer and winter months by counties for the year 1913.

Table No. 2. This gives the acreage, yield per acre and total yield of corn, oats, winter wheat, spring wheat and barley by counties for the year 1913.

Table No. 3. This shows the acreage, yield per acre and total yield of rye, tame hay, wild hay, alfalfa, potatoes and flax seed by counties for the year 1913.

Table No. 4. The live stock figures are given in this table showing the number of horse of all ages, mules all ages on the farms January 1, 1914, and number of swine on farms July 1, 1913; the number of swine lost from hog cholera during the year 1913; the number of dairy cows kept for milk; number of other cattle not kept for milk and total number of cattle all ages on farms January 1, 1914. The number of sheep kept on farms, the number shipped in for feeding and the number sold for slaughter; the total number of pounds of wool clipped; the total number of all varieties of poultry on farms July 1, 1913, and the estimated number of dozens of eggs gathered for the year 1913.

Table No. 5. Gives the total acreage of sweet corn, tons gathered for canning, total acreage of pop corn and yield in bushels and the total acreage and yield in bushels of timothy seed and clover seed.

Below is given a brief summary showing acreage, production, average yield per acre and total value of Iowa farm products for the year 1913.

1913—TABULATED CROP SUMMARY—1913.

	Acreage	Production	Average per acre	Average farm price Dec. 31, '13	Value per acre	Total Value
Corn	9,180,774	342,158,425 bu.	37.3	$ .59	$ 22.00	$ 201,873,447.75
Oats	5,265,978	184,500,903 bu.	35.1	.34	12.03	62,730,337.62
Winter wheat	525,616	12,210,812 bu.	23.2	.77	15.86	9,402,325.24
Spring wheat	276,390	4,137,995 bu.	15.0	.75	11.25	3,103,496.25
Barley	458,743	9,550,48 bu.	20.8	.53	11.02	5,061,755.46
Rye	74,599	1,179,307 bu.	15.8	.59	9.32	695,789.00
Potatoes	112,314	5,865,140 bu.	52.2	.85	44.37	4,985,369.00
Flax seed	15,462	121,869 bu.	7.88	1.36	10.72	165,741.84
Hay (Tame)	2,959,900	3,568,590 T.	1.2	9.93	11.92	35,436,098.70
Hay (Wild)	722,218	794,142 T.	1.1	8.80	9.68	6,988,449.60
Altalfa	79,769	188,941 T.	2.4	--------	--------	1,821,090.00
Miscellaneous crops	85,434	Estimated	--------	--------	--------	8,000,000.00
Timothy seed	223,579	877,583 bu.	--------	--------	--------	3,059,965.00
Clover seed	129,867	152,820 bu.	--------	--------	--------	592,552.00
Pop corn	18,188	525,942 bu.	--------	--------	--------	385,600.00
Sweet corn	17,471	Estimated	--------	--------	--------	700,000.00
Garden truck	51,856	Estimated	--------	--------	--------	1,000,000.00
Orchards	148,437	Estimated	--------	--------	--------	7,000,000.00
Pasturage	9,420,492	Estimated	--------	--------	--------	83,000,000.00
Ensilage	----------	Estimated	--------	--------	--------	2,156,000.00
Total value farm crops	----------	----------	--------	--------	--------	$ 438,157,440.46
Wool	----------	3,327,297 lbs.	--------	--------	--------	$ 1,500,000.00
Dairy products	----------	Estimated	--------	--------	--------	53,530,790.00
Poultry and eggs	----------	Estimated	--------	--------	--------	38,000,000.00
Total val. farm products	----------	----------	--------	--------	--------	$ 531,188,230.46

TABLE NO. 1

Total number, average size and total acreage of farms, total acreage occupied by farm buildings, public highways and feed lots, acreage in pasture, garden, orchard, crops not otherwise enumerated and land not utilized for any purpose. Total number bushels apples harvested, monthly wage paid farm help, summer and winter months, by counties, for the year 1913.

Counties	Number of farms	Average size of farms	Total acreage of farms	Total No. acres occupied by farm buildings, public highways and feed lots	Acreage in pasture	Acreage in garden	Acreage in orchard	Number bushels apples harvested	Acreage in crop not otherwise enumerated	Acreage in waste land, not utilized for any purpose	Average monthly wage paid farm help summer months	Averabe monthly wage paid farm help winter months
Adair	2,067	193	399,963	19,123	115,714	341	1,758	10,495	136	985	$ 32.30	$ 26.38
Adams	1,515	163	251,298	10,994	96,466	158	1,080	7,055	148	903	31.06	30.73
Allamakee	2,090	170	355,550	8,791	164,315	241	914	28,608	207	36,738	31.88	22.40
Appanoose	1,540	169	260,359	8,786	105,187	342	1,594	23,100	630	1,596	--------	--------
Audubon	1,721	153	263,794	12,827	65,652	157	1,023	9,822	659	336	31.50	20.81
Benton	2,214	183	404,120	16,030	103,979	252	831	18,758	288	759	34.76	24.41
Black Hawk	2,168	153	331,850	13,361	87,112	445	847	27,017	801	2,215	32.00	22.00
Boone	2,330	142	326,010	13,190	83,181	574	1,564	17,075	525	1,925	42.00	32.00
Bremer	1,723	138	238,097	10,219	69,305	213	321	11,724	2,474	693	30.35	23.60
Buchanan	2,083	154	321,434	10,939	101,763	115	512	19,862	602	922	31.88	23.58
Buena Vista	1,981	175	347,330	17,831	76,677	167	657	18,465	1,757	2,932	35.63	23.77
Butler	2,005	165	330,173	15,145	94,016	120	419	12,817	585	830	29.72	17.69
Calhoun	1,792	180	322,065	14,974	53,093	158	475	10,399	523	2,260	31.42	23.37
Carroll	1,897	173	327,250	15,965	73,374	272	812	9,321	232	1,709	32.72	22.53
Cass	2,092	159	332,853	13,651	93,921	409	1,646	5,092	141	794	32.40	24.75
Cedar	2,113	149	315,611	11,479	97,193	146	961	29,785	795	1,686	31.94	24.06
Cerro Gordo	1,687	187	316,347	22,697	79,954	261	789	23,244	844	3,288	30.00	20.50
Cherokee	1,765	195	345,953	16,305	81,372	503	960	29,442	304	1,638	33.45	20.80
Chickasaw	1,621	159	258,128	11,680	81,651	211	326	11,647	167	771	33.50	24.90
Clarke	1,434	168	241,501	9,382	46,036	318	930	14,537	655	4,271	25.50	27.35
Clay	1,580	207	326,368	16,545	74,044	81	367	20,129	287	2,512	32.86	23.57
Clayton	2,654	162	429,834	12,650	171,631	670	1,321	58,294	1,263	14,323	--------	--------
Clinton	2,666	154	411,889	14,666	149,980	174	415	8,448	1,863	3,336	33.22	20.60
Crawford	2,272	186	422,362	20,295	115,118	131	876	8,956	164	1,240	32.62	24.32
Dallas	2,123	161	341,530	13,544	95,298	294	2,273	22,393	--------	--------	31.67	28.60
Davis	1,807	139	251,398	6,354	122,104	483	1,376	39,894	818	1,389	26.03	27.47
Decatur	1,673	157	262,375	7,375	98,616	327	1,032	14,625	551	343	27.30	27.72

TABLE NO. 1—CONTINUED.

Counties	Number of farms	Average size of farms	Total acreage of farms	Total No. acres occupied by farm buildings, public highways and feed lots	Acreage in pasture	Acreage in garden	Acreage in orchard	Number bushels apples harvested	Acreage in crop not otherwise enumerated	Acreage in waste land, not utilized for any purpose	Average monthly wage paid farm help summer months	Average monthly wage paid farm help winter months
Delaware	2,040	164	334,674	12,978	117,313	351	446	19,184	657	3,698	29.83	25.97
Des Moines	1,981	123	244,223	6,269	90,432	781	2,110	83,666	2,148	6,159	29.94	27.07
Dickinson	934	208	194,195	9,628	46,414	60	142	7,300	355	3,201	32.75	29.43
Dubuque	2,560	139	356,583	9,318	154,212	851	1,038	38,386	355	5,635	31.42	19.26
Emmet	956	212	202,216	8,940	46,627	52	393	15,437	568	8,031	32.58	24.10
Fayette	2,820	147	415,321	18,264	146,558	596	922	56,299	726	857	31.63	24.16
Floyd	1,785	148	262,800	12,437	64,005	193	423	16,007	1,495	2,260	31.37	19.41
Franklin	2,054	173	354,515	17,461	86,190	161	734	15,730	1,514	4,111	33.00	23.00
Fremont	1,449	187	270,849	10,520	70,978	122	2,715	69,692	802	2,627	33.89	34.18
Greene	1,882	175	329,465	16,574	79,008	191	923	6,476	334	2,198	30.97	25.97
Grundy	1,590	188	298,419	15,586	69,401	116	373	13,792	70	93	33.88	20.44
Guthrie	2,240	154	344,277	14,260	117,988	765	2,141	21,016	314	2,243	32.00	--------
Hamilton	2,058	168	345,958	15,440	77,219	174	288	9,649	388	6,473	33.65	24.32
Hancock	1,837	195	357,471	16,960	82,342	240	322	10,842	855	14,044	31.36	23.62
Hardin	1,811	167	302,808	13,193	69,776	307	609	20,416	354	740	31.53	25.91
Harrison	2,171	155	335,955	13,518	78,343	344	1,643	34,909	1,960	9,168	29.06	27.17
Henry	1,673	145	243,014	10,279	89,129	162	1,299	47,684	185	1,404	28.23	24.57
Howard	1,563	166	258,851	13,453	72,763	187	341	21,667	176	1,127	32.41	24.96
Humboldt	1,346	185	249,687	12,213	48,616	49	458	13,031	1,486	4,030	33.03	21.27
Ida	1,425	183	260,793	12,740	56,202	71	427	9,453	16	138	29.99	15.42
Iowa	2,079	160	332,931	10,409	106,196	467	1,415	37,764	7,031	2,914	--------	--------
Jackson	2,052	170	349,713	8,839	169,142	231	832	24,829	262	4,955	40.71	21.50
Jasper	2,964	143	423,116	16,601	144,396	569	1,855	22,272	327	1,006	31.60	29.20
Jefferson	1,629	136	222,309	7,380	85,666	187	1,151	20,548	215	361	30.00	25.00
Johnson	2,358	143	336,721	8,235	113,496	300	1,481	46,718	766	1,624	34.10	27.35
Jones	1,999	156	312,475	9,204	123,289	485	513	10,372	469	917	32.30	24.35
Keokuk	2,475	138	342,582	12,410	123,398	465	2,020	48,213	515	3,769	29.83	27.88
Kossuth	2,574	209	537,058	23,631	118,242	256	827	37,033	749	15,218	30.47	23.75
Lee	2,009	136	273,467	8,845	115,994	650	2,787	43,819	1,759	3,466	--------	--------
Linn	2,880	132	380,166	13,314	159,446	1,081	1,172	32,430	166	3,244	30.00	27.00
Louisa	1,244	162	201,060	4,854	67,299	6,626	3,655	31,709	1,638	4,735	29.17	28.44

Lucas	1,471	188	275,908	6,909	113,960	412	1,297	13,524	200	903	27.75	23.00
Lyon	1,495	211	315,623	16,332	57,021	57	186	3,346	296	511	35.00	19.00
Madison	2,090	153	320,675	11,498	132,073	222	3,378	27,084	686	3,688	28.90	24.33
Mahaska	2,289	123	281,352	8,545	98,834	354	1,869	42,388	422	3,424	34.53	25.13
Marion	1,948	144	280,845	9,352	110,149	145	1,016	14,747	356	1,779	30.81	30.53
Marshall	2,192	153	334,710	16,257	80,674	739	1,880	17,257	365	1,070	32.46	25.91
Mills	1,462	162	236,299	9,457	63,665	95	2,538	41,848	1,100	1,850	30.65	29.71
Mitchell	1,786	266	474,666	12,980	61,183	1,255	540	16,296	1,107	1,739	33.57	22.26
Monona	2,085	174	363,110	14,526	84,994	159	1,195	26,119	1,693	12,828	32.79	31.59
Monroe	1,824	123	224,003	5,907	118,702	137	1,561	36,832	1,479	3,918	25.22	24.28
Montgomery	1,532	165	252,875	9,848	67,479	223	1,293	4,422	84	483	33.06	28.22
Muscatine	1,709	142	243,099	8,849	91,026	1,606	1,028	28,360	3,786	2,053	29.59	25.00
O'Brien	1,748	196	342,895	18,255	75,547	206	433	9,331	348	347	32.91	18.69
Osceola	1,102	216	238,410	11,803	43,584	111	494	4,777	111	1,539	32.09	23.00
Page	2,193	142	312,348	12,389	97,736	225	1,735	21,376	8,183	2,917	31.12	28.12
Palo Alto	1,510	193	295,428	15,663	78,505	177	451	37,338	406	3,369	30.00	15.60
Plymouth	2,463	206	507,460	23,144	103,311	393	509	6,451	602	1,498	28.75	18.50
Pocahontas	1,856	180	334,141	14,999	62,348	93	496	17,307	416	3,086	32.20	23.31
Polk	2,332	126	281,228	11,789	71,659	649	2,552	44,967	1,326	3,567	30.30	27.40
Pottawattamie	3,159	166	525,347	22,461	133,907	776	3,246	24,146	1,252	3,201	31.86	23.90
Poweshiek	2,063	163	337,720	12,641	110,139	268	1,418	16,382	136	1,062	32.77	26.47
Ringgold	1,945	158	308,104	13,581	115,706	171	1,273	14,789	123	673	27.10	27.43
Sac	1,874	181	340,064	16,110	76,107	143	815	7,995	949	1,466	33.00	26.54
Scott	2,075	127	263,783	10,680	74,290	7,720	20,028	37,329	424	1,471	34.24	19.08
Shelby	1,996	178	355,252	14,444	91,457	793	1,323	7,322	390	708	33.53	18.25
Sioux	2,372	190	452,389	20,258	82,829	2,908	2,189	7,439	547	384		
Story	2,129	153	325,996	15,789	68,899	27	574	5,508	395	5,522	32.13	23.26
Tama	2,304	178	411,243	16,298	121,186	317	1,092	2,938	353	3,836	35.00	25.00
Taylor	1,863	153	276,576	10,583	105,769	259	1,837	15,209	37	328	30.00	29.00
Union	1,492	159	237,694	9,638	94,228	601	1,552	22,412	231	1,373	28.53	28.74
Van Buren	3,096	85	245,548	7,035	125,864	248	1,939	50,101	736	742	28.22	19.82
Wapello	1,909	125	238,662	9,382	94,274	474	2,098	63,715	1,740	3,243	27.06	27.94
Warren	2,268	145	325,636	10,808	145,286	3,610	13,443	37,596	299	2,433	30.00	30.00
Washington	1,922	156	298,879	11,057	160,409	160	2,072	49,547	691	299	30.13	28.91
Wayne	1,734	168	290,524	11,142	107,255	357	1,140	9,494	389	94	28.30	26.60
Webster	2,469	170	419,711	17,567	92,867	207	738	24,419	555	8,363	31.03	25.16
Winnebago	1,452	167	242,713	13,268	54,389	36	1,901	13,549	1,374	9,836	31.19	19.97
Winneshiek	2,790	149	415,981	15,708	143,633	373	836	35,779	1,838	11,075	32.08	19.82
Woodbury	2,620	179	468,652	19,759	105,294	456	1,269	48,024	2,734	3,607	33.15	26.90
Worth	1,320	173	228,751	12,247	56,780	66	1,050	9,568	948	2,814	32.34	26.53
Wright	1,628	200	326,338	21,418	69,703	62	569	10,987	658	5,924	32.41	23.50
Total	194,598	162.7	31,658,759	1,300,986	9,420,492	51,856	148,437	2,335,263	85,434	333,336	$ 31.68	$ 24.65

TABLE NO. 2

Acreage, yield per acre and total yield of corn, oats, winter wheat, spring wheat and barley, by counties for the year of 1913.

Counties	Corn			Oats			Winter Wheat			Spring Wheat			Barley		
	Acres	Bushels per acre	Total bushels	Acres	Bushels per acre	Total bushels	Acres	Bushels per acre	Total bushels	Acres	Bushels per acre	Total bushels	Acres	Bushels per acre	Total bushels
Adair	99,419	35	3,428,898	46,160	31	1,445,147	5,517	25	138,414	3,216	18	57,335	2,975	24	70,435
Adams	66,516	27	1,798,277	24,197	36	859,052	14,072	24	339,090	447	16	7,021	664	23	15,428
Allamakee	41,328	49	2,046,336	35,172	34	1,188,960	1,337	18	24,0[illegible]	769	19	14,672	11,786	24	280,679
Appanoose	44,746	24	1,078,338	2,067	36	803,391	2,628	20	52,238	234	18	4,122	13	15	195
Audubon	89,192	36	3,226,891	42,701	36	1,537,432	1,838	26	47,785	4,962	17	84,348	8,679	27	234,390
Benton	122,043	37	4,572,551	79,451	34	2,767,328	260	20	5,232	373	14	5,269	13,847	22	298,857
Black Hawk	99,048	39	3,903,945	57,583	35	2,008,209	1,541	20	30,882	308	9	2,827	5,499	24	129,251
Boone	116,377	40	4,625,089	64,462	37	2,409,731	3,369	23	75,730	1,299	16	20,976	954	18	17,296
Bremer	58,813	39	2,313,472	51,954	33	1,705,710	319	19	6,075	211	17	3,524	1,950	23	43,932
Buchanan	88,336	36	3,207,386	58,169	32	1,861,408	270	15	4,132	227	23	5,118	1,197	22	26,012
Buena Vista	113,922	41	4,715,712	85,847	32	2,766,588	354	18	6,282	643	13	8,540	2,219	17	37,713
Butler	100,033	38	3,815,492	74,590	35	2,638,664	384	16	6,177	547	17	9,191	1,655	22	36,746
Calhoun	116,574	46	5,362,408	90,871	38	3,450,625	1,053	20	20,525	194	16	3,043	1,652	19	31,115
Carroll	111,417	39	4,377,531	77,595	28	2,193,464	2,074	23	47,112	5,221	15	78,802	5,989	17	101,068
Cass	104,633	32	3,315,359	40,315	37	1,503,227	22,272	24	514,287	7,376	17	124,034	3,789	28	106,675
Cedar	98,417	43	4,205,680	36,980	33	1,219,485	1,437	21	30,113	246	16	3,878	17,838	21	380,721
Cerro Gordo	93,793	39	3,699,041	91,591	30	2,762,650	369	15	5,485	780	16	12,412	4,340	22	96,254
Cherokee	119,312	38	4,524,098	81,970	36	2,985,633	269	24	6,503	801	14	11,601	5,321	18	93,760
Chickasaw	64,314	39	2,480,103	57,243	37	2,002,538	472	16	7,340	1,725	16	28,157	5,363	18	97,949
Clarke	54,277	28	1,514,768	23,925	34	809,850	8,725	19	164,608	34	14	461	97	20	1,977
Clay	97,298	44	4,291,891	78,590	35	2,789,363	236	17	3,973	1,124	14	15,554	4,997	20	100,429
Clayton	72,885	47	3,410,786	74,341	29	2,152,975	1,901	22	40,991	570	20	11,276	11,885	24	289,349
Clinton	116,246	42	4,916,150	43,004	33	1,414,523	3,427	20	67,615	687	16	10,933	11,110	22	242,550
Crawford	136,668	37	5,118,179	66,735	32	2,140,178	2,289	20	46,539	12,436	13	163,531	7,228	21	152,950
Dallas	117,560	36	4,252,463	51,356	41	2,120,378	9,985	23	234,187	1,043	17	18,080	2,027	21	41,755
Davis	43,469	25	1,064,993	23,920	35	825,744	1,650	16	26,987	111	15	1,620	4	32	128
Decatur	59,338	26	1,588,483	25,803	31	808,496	9,579	20	187,905	4	12	46	11	26	286
Delaware	87,499	35	3,104,464	49,972	31	1,544,963	109	18	1,978	118	18	2,096	7,262	22	161,397
Des Moines	69,954	31	2,138,244	33,705	31	1,041,405	2,482	20	50,794	108	14	1,496	359	23	8,404
Dickinson	52,048	42	2,165,916	41,975	36	1,512,622	83	16	1,349	1,989	13	25,563	4,648	28	129,263

Dubuque	64,808	38	2,469,918	53,241	29	1,564,991	601	19	11,478	444	17	7,678	2,539	23	58,737
Emmet	55,073	39	2,140,892	45,519	39	1,787,307	42	17	718	957	14	13,343	5,119	19	97,263
Fayette	93,275	39	3,671,172	68,167	33	2,277,036	750	17	13,097	647	16	10,679	6,794	23	159,864
Floyd	81,007	39	3,151,765	72,404	32	2,360,117	407	16	6,738	367	17	16,547	2,651	22	44,128
Franklin	108,983	40	4,352,236	86,348	34	2,909,544	364	14	5,183	[illegible]	17	12,668	1,873	23	42,545
Fremont	113,955	27	3,089,566	12,870	31	397,836	30,601	27	814,557	880	17	14,615	119	23	2,727
Greene	126,655	38	4,863,004	66,815	37	2,485,904	1,579	28	43,534	638	17	11,379	1,167	23	25,735
Grundy	93,119	46	4,312,641	71,370	38	2,639,180	275	21	5,857	247	18	4,585	8,606	24	20[illegible],974
Guthrie	103,583	36	3,657,832	51,736	36	1,842,072	3,533	27	94,684	3,033	17	51,768	2,448	23	55,636
Hamilton	119,915	47	5,642,550	83,437	36	3,043,498	726	21	15,178	489	12	6,655	628	20	12,782
Hancock	97,284	41	4,004,562	85,634	36	3,055,287	39	17	652	2,874	14	41,148	5,648	18	104,348
Hardin	98,815	48	4,759,9[illegible]0	70,513	38	2,668,374	418	21	8,767	528	17	8,962	871	23	20,653
Harrison	128,784	32	4,145,222	21,654	29	631,100	17,435	20	347,695	19,886	14	279,184	1,468	24	35,415
Henry	73,220	29	2,099,266	32,[illegible]94	33	1,052,785	1,043	20	20,826	6	16	96	93	21	1,979
Howard	55,652	38	2,109,185	52,315	35	1,844,932	1,100	15	17,125	1,039	16	16,167	8,504	23	194,179
Humboldt	82,623	42	3,465,335	65,537	35	2,321,334	668	16	10,445	1,337	15	23,295	1,709	19	32,524
Ida	85,158	44	3,727,315	49,869	32	1,594,414	471	19	9,085	2,004	13	27,767	11,351	16	184,385
Iowa	91,412	38	3,45[illegible],984	47,594	32	1,535,277	1,116	19	22,059	866	15	13,286	1,365	22	29,445
Jackson	58,671	42	2,553,094	30,723	26	813,652	1,619	17	26,982	814	14	11,724	2,589	21	55,409
Jasper	130,270	38	4,916,706	59,776	37	2,209,060	5,614	21	117,005	2,837	16	45,191	346	26	8,216
Jefferson	56,488	41	2,319,729	27,227	38	1,034,842	1,956	11	21,551	321	12	3,903	396	25	9,715
Johnson	88,117	38	3,353,724	64,651	23	1,511,537	1,714	18	31,728	491	16	8,024	1,601	25	40,481
Jones	75,188	38	2,892,059	34,755	34	1,165,500	302	21	6,274	295	18	5,439	6,205	24	148,878
Keokuk	94,310	35	3,300,825	44,429	29	1,278,034	1,979	20	29,186	1,825	16	28,565	539	25	13,126
Kossuth	151,748	39	5,840,614	134,990	35	4,697,175	306	20	6,009	1,097	13	52,330	7,102	17	123,039
Lee	53,640	26	1,404,368	23,629	29	694,841	6,158	20	128,864	44	11	464	558	21	11,775
Linn	94,608	43	4,108,015	57,348	35	2,030,571	671	20	13,481	926	14	13,396	2,334	16	38,022
Louisa	62,893	27	1,674,212	24,236	27	649,747	4,155	22	93,114	129	16	2,066	231	16	3,658
Lucas	42,411	33	1,403,271	21,647	41	891,004	6,307	25	156,578	220	37	8,162	71	25	1,812
Lyon	113,153	35	3,984,040	[illegible]	37	3,367,909	242	20	4,804	5,751	15	86,076	23,7[illegible]9	12	273,517
Madison	8[illegible],613	32	2,581,237	29,578	35	1,035,9[illegible]0	11,454	23	262,860	1,020	16	25,710	1,929	25	49,705
Mahaska	85,942	31	2,696,103	49,981	26	1,289,315	4,[illegible]01	19	77,147	1,396	17	22,911	2,103	10	22,360
Marion	77,186	28	2,152,316	28,481	29	826,767	14,850	20	293,970	2,0[illegible]9	14	27,494	944	22	21,047
Marshall	113,198	40	4,577,3[illegible]0	70,645	35	2,447,072	3,2[illegible]5	23	73,649	900	17	15,0[illegible]3	808	26	2[illegible],665
Mills	83,227	34	2,847,575	18,794	24	455,103	21,651	24	529,995	2,9[illegible]2	17	48,927	4[illegible]2	29	12,485
Mitchell	65,[illegible]31	40	2,629,754	74,445	35	2,585,[illegible]22	218	17	3,675	[illegible],163	18	30,318	7,252	25	179,238
Monona	142,940	33	4,778,703	23,374	25	385,228	28,697	20	562,616	11,752	11	127,246	3,198	18	56,132
Monroe	37,443	29	1,084,631	14,031	36	507,211	6,439	20	128,687	1,777	16	28,435	133	19	2,589
Montgomery	83,767	34	2,815,255	18,805	37	687,186	25,818	25	651,867	4,180	16	67,729	276	29	7,875
Muscatine	72,275	34	2,455,752	21,811	29	633,145	2,586	20	50,775	[illegible]43	12	3,285	7,853	21	166,467
O'Brien	112,127	44	4,936,735	77,692	37	2,890,782	287	17	4,953	1,779	15	27,262	17,[illegible]82	21	367,386
Osceola	72,392	41	2,993,755	61,645	42	2,558,3[illegible]6	197	17	3,3[illegible]1	1,504	17	25,734	11,785	24	287,675
Page	104,562	31	3,283,899	20,617	38	776,785	31,282	28	863,682	1,832	17	31,155	317	27	8,608
Palo Alto	133,215	28	3,780,769	84,650	41	3,498,189	37	12	466	958	14	13,202	1,051	27	23,079
Plymouth	182,583	33	5,969,117	85,295	28	2,388,076	2,592	24	63,120	40,[illegible]	13	516,758	12,[illegible]12	11	137,233
Pocahontas	111,670	43	4,833,701	90,149	36	3,283,346	422	21	8,976	594	16	9,326	1,324	18	24,255
Polk	93,465	35	3,221,879	38,793	35	1,372,3[illegible]2	28,225	16	440,994	2,473	15	36,019	257	23	5,863

TABLE NO. 2—CONTINUED.

Counties	Corn			Oats			Winter Wheat			Spring Wheat			Barley		
	Acres	Bushels per acre	Total bushels	Acres	Bushels per acre	Total bushels	Acres	Bushels per acre	Total bushels	Acres	Bushels per acre	Total bushels	Acres	Bushels per acre	Total bushels
Pottawatamie	193,683	35	6,707,584	47,044	36	1,680,395	33,321	25	831,706	14,135	16	230,432	5,883	26	152,678
Poweshiek	107,538	34	3,703,041	53,437	32	1,726,080	955	20	19,515	977	15	14,904	2,009	19	38,256
Ringgold	71,247	24	1,743,063	30,377	33	1,012,102	10,379	22	229,524	126	10	1,265	33	27	887
Sac	111,283	45	4,956,965	69,923	36	2,525,524	442	21	9,478	399	14	5,726	9,076	20	177,854
Scott	73,743	38	2,807,215	21,623	28	609,351	5,556	21	119,141	557	16	9,067	28,973	21	581,180
Shelby	126,669	35	4,370,343	53,357	34	1,792,355	2,528	20	51,361	10,385	15	154,559	11,890	24	284,179
Sioux	156,511	45	7,075,473	85,585	34	3,010,255	1,257	22	27,289	27,498	19	523,425	23,592	21	500,152
Story	128,954	43	5,596,735	69,453	36	2,528,565	2,194	22	47,163	595	16	9,263	125	23	2,904
Tama	121,249	41	5,000,192	68,289	36	2,429,908	961	20	19,326	2,318	16	36,673	12,627	22	282,287
Taylor	69,939	29	2,009,264	22,931	41	954,441	23,533	26	613,418	187	18	3,371	393	26	9,940
Union	60,506	29	1,767,988	27,063	35	952,176	3,262	22	73,150	562	16	9,029	151	25	3,775
Van Buren	53,975	31	1,670,066	22,291	36	805,897	2,750	14	37,982	71	17	1,221	138	18	2,544
Wapello	56,997	31	1,741,256	22,786	34	773,759	7,541	20	150,917	255	16	4,167	211	29	6,029
Warren	79,212	25	1,951,013	25,689	36	920,101	36,669	13	458,687	892	14	13,445	551	25	13,738
Washington	83,132	35	2,940,159	48,823	29	1,431,234	1,218	20	24,354	325	16	5,258	476	23	10,906
Wayne	66,340	24	1,587,486	35,136	36	1,264,324	6,734	16	106,466	50	12	617	109	19	2,070
Webster	131,397	46	6,008,372	102,595	36	3,730,753	911	22	19,833	2,877	11	30,243	860	19	16,151
Winnebago	58,696	38	2,267,425	43,044	36	1,553,138	38	19	718	11,178	15	170,586	6,597	22	146,225
Winneshiek	77,437	46	3,602,436	67,353	30	2,097,193	1,291	17	22,220	4,296	16	66,780	19,330	22	420,316
Woodbury	187,382	40	7,503,780	57,407	25	1,413,153	10,265	16	165,397	9,105	12	108,757	5,960	17	103,816
Worth	52,077	41	2,094,210	53,302	34	1,805,736	226	12	2,703	6,335	16	100,184	6,429	21	113,582
Wright	108,878	43	4,643,075	88,850	34	2,937,500	332	23	7,543	1,214	16	19,450	1,795	18	32,477
Total	9,180,774	37.3	342,158,425	,205,978	35.4	184,500,993	525,616	23.2	12,210,812	76,390	15	4,137,995	458,743	20.8	9,550,482

TABLE NO. 3

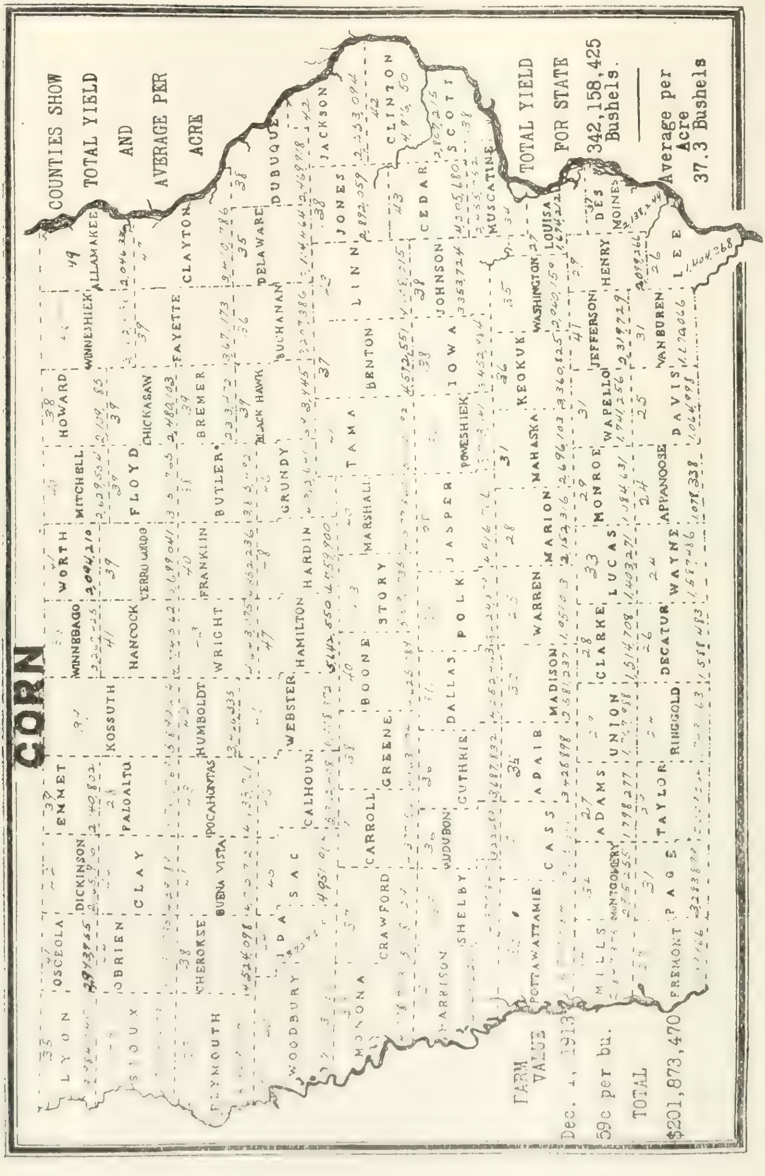
Acreage, yield per acre and total yield of rye, tame hay, wild hay, alfalfa, potatoes and flax seed, by counties, for the year 1913.

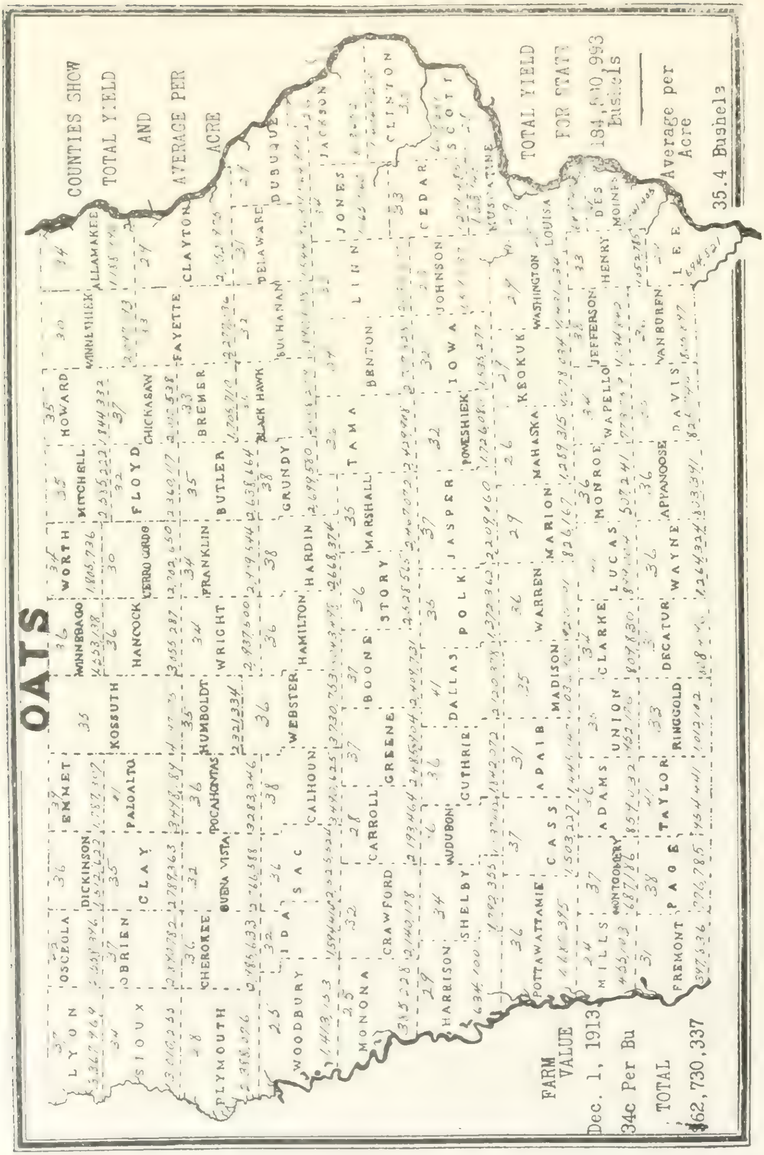
Counties	Rye			Hay (Tame)			Hay (Wild)			Alfalfa		Potatoes			Flax Seed	
	Acres	Bushels per acre	Total bushels	Acres	Tons per acre	Total tons	Acres	Tons per acre	Total tons	Acres	Total tons	Acres	Bushels per acre	Total bushels	Acres	Total bushels
Adair	367	14	5,071	37,947	1.1	43,239	3,903	1.5	5,767	82	193	1,071	37	39,751	--------	--------
Adams	250	22	5,577	27,285	1.2	32,736	1,903	1.2	2,218	231	527	413	22	9,165	--------	--------
Allamakee	1,074	15	15,581	45,766	1.3	58,039	1,286	1.7	2,205	65	130	943	99	93,172	38	300
Appanoose	1,029	17	17,493	34,011	0.9	32,226	1,242	1.0	1,223	33	63	201	51	10,326	--------	--------
Audubon	150	21	3,076	24,788	1.4	33,611	2,418	1.9	4,731	393	961	752	53	39,754	--------	--------
Benton	1,012	16	15,966	43,602	1.3	57,922	4,543	1.2	5,288	69	136	1,164	38	43,917	--------	--------
Black Hawk	2,268	14	30,787	29,380	1.3	38,722	9,601	1.1	10,227	62	116	2,679	23	60,842	--------	--------
Boone	114	14	1,566	23,372	1.2	27,990	12,517	1.0	12,516	223	426	1,114	25	27,817	18	107
Bremer	1,461	17	25,028	16,160	1.2	19,108	19,552	1.1	21,615	24	29	1,141	58	66,349	--------	--------
Buchanan	1,274	16	20,496	34,604	1.1	38,096	12,866	1.0	13,208	4	2	693	51	35,637	10	93
Buena Vista	42	21	886	20,864	1.2	26,266	16,078	1.0	16,696	246	380	1,513	43	65,508	164	738
Butler	3,055	15	47,228	23,030	1.2	27,037	10,750	1.1	12,270	7	7	1,358	47	63,833	27	254
Calhoun	5	15	75	18,411	1.2	22,845	8,748	0.9	8,381	72	160	528	43	22,954	52	338
Carroll	35	19	695	21,748	1.3	27,407	11,431	1.3	14,789	271	556	2,128	51	108,717	66	160
Cass	337	19	6,466	33,162	1.1	38,002	1,866	1.5	2,656	458	731	1,078	33	35,008	--------	--------
Cedar	1,017	16	16,347	43,174	1.4	63,076	162	1.0	169	28	89	1,014	54	54,869	--------	--------
Cerro Gordo	258	19	4,934	24,273	1.1	27,572	17,718	0.9	14,567	76	208	1,350	67	90,107	423	3,902
Cherokee	47	15	704	24,352	1.3	31,238	10,508	1.1	11,215	918	1,826	1,763	31	54,823	--------	--------
Chickasaw	788	16	12,915	21,455	1.2	24,891	16,286	1.0	15,737	3	4	1,527	41	63,331	463	3,241
Clark	134	19	2,485	31,486	1.0	31,030	241	0.7	176	10	21	217	49	10,608	--------	--------
Clay	474	24	11,143	21,000	1.0	21,600	18,744	1.0	18,448	78	154	834	73	60,983	556	3,516
Clayton	3,249	16	52,952	57,721	1.4	80,227	1,406	1.4	2,004	36	151	1,698	95	152,665	--------	--------
Clinton	2,228	16	36,471	57,928	1.3	77,675	3,413	1.2	4,167	84	164	970	60	58,264	5	50
Crawford	225	17	3,857	44,103	1.2	50,753	6,392	1.3	7,998	1,816	3,899	1,846	52	96,340	--------	--------
Dallas	182	21	3,758	25,635	1.3	34,314	4,449	1.0	4,555	301	836	392	38	14,705	--------	--------
Davis	728	13	9,452	35,785	1.0	37,118	37	0.9	32	7	21	316	59	18,683	--------	--------
Decatur	728	14	10,260	33,964	1.0	35,341	655	1.0	624	140	176	109	55	5,950	465	1,341
Delaware	2,984	14	40,572	41,913	1.2	49,489	6,914	1.1	7,502	35	56	910	58	53,152	--------	--------
Des Moines	1,999	15	31,976	24,751	1.2	29,037	145	1.1	163	123	257	808	51	41,353	--------	--------
Dickinson	153	21	3,269	10,139	1.0	10,566	16,248	1.0	16,178	48	134	507	74	37,476	563	6,435

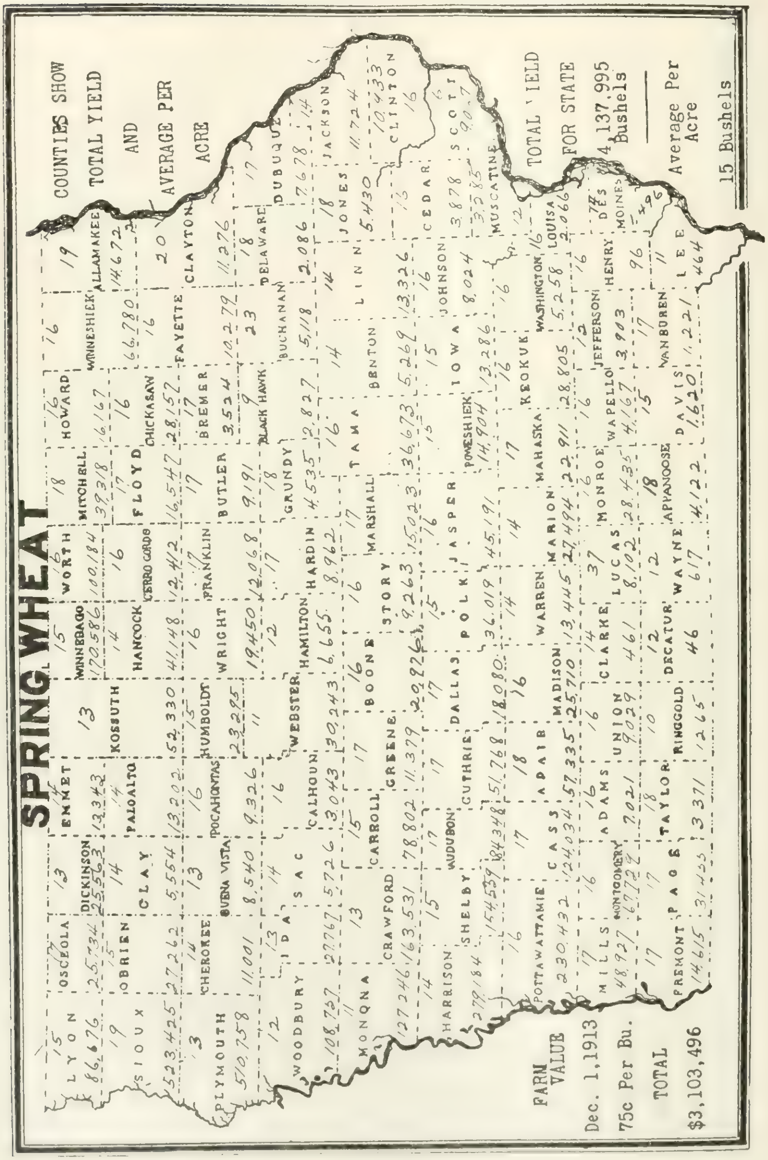
TABLE NO. 3—CONTINUED

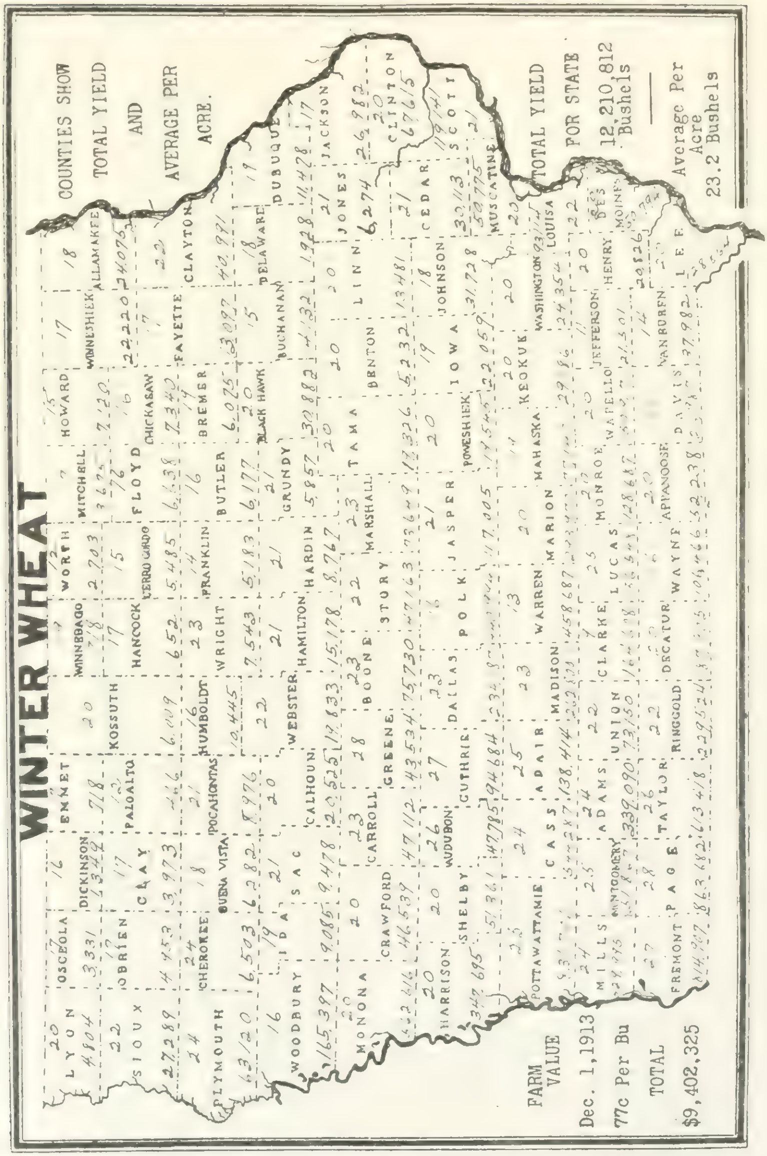
Counties	Rye			Hay (Tame)			Hay (Wild)			Alfalfa		Potatoes			Flax Seed	
	Acres	Bushels per acre	Total bushels	Acres	Tons per acre	Total tons	Acres	Tons per acre	Total tons	Acres	Total tons	Acres	Bushels per acre	Total bushels	Acres	Total bushels
Dubuque	1,127	15	17,258	57,653	1.2	67,005	871	1.5	1,302	57	128	1,858	95	176,775	--------	--------
Emmet	212	14	2,935	12,852	1.1	13,664	12,618	1.0	13,111	10	22	798	58	46,577	732	4,574
Fayette	2,344	17	40,504	19,618	1.3	62,091	11,169	1.0	11,166	103	68	1,299	72	93,579	70	520
Floyd	2,143	16	34,219	27,131	1.2	32,570	4,835	1.0	4,913	40	59	1,679	61	102,410	232	3,022
Franklin	146	18	2,635	26,771	1.2	31,891	11,365	1.0	11,313	95	117	2,262	39	87,213	163	1,337
Fremont	834	19	16,149	11,193	1.3	14,494	4,530	1.4	6,167	6,488	13,971	593	73	38,229	--------	--------
Greene	58	22	1,290	23,316	1.1	25,920	9,293	1.0	9,673	86	241	659	38	21,886	--------	--------
Grundy	136	19	2,625	25,980	1.4	35,381	6,198	1.2	7,541	13	46	2,748	58	150,658	--------	--------
Guthrie	36	20	730	29,323	1.3	37,562	4,374	1.3	5,783	51	101	561	40	22,713	--------	--------
Hamilton	14	19	265	21,375	1.4	34,917	11,171	1.1	12,123	102	242	660	54	35,844	110	361
Hancock	277	14	3,855	21,192	1.1	23,164	27,053	0.9	25,356	65	123	1,063	69	73,048	735	5,798
Hardin	126	16	2,068	24,858	1.3	32,841	9,172	1.1	10,679	81	218	1,218	47	57,402	52	479
Harrison	407	15	6,036	10,346	1.3	13,955	8,918	1.7	15,505	9,916	21,611	757	43	32,501	--------	--------
Henry	1,333	15	19,549	27,903	1.2	34,691	--------	----	--------	46	90	309	70	21,709	--------	--------
Howard	1,166	16	18,463	28,994	1.1	31,487	9,568	1.0	9,676	35	35	1,033	69	71,248	1,121	9,580
Humboldt	106	18	1,927	17,434	1.3	21,976	11,092	0.9	10,112	142	237	469	54	25,436	137	974
Ida	71	16	1,161	23,828	1.2	29,179	2,591	1.2	3,045	432	717	789	45	35,109	--------	--------
Iowa	504	16	7,823	36,857	1.3	49,409	458	1.4	634	59	111	1,207	50	60,829	--------	--------
Jackson	1,241	25	31,089	58,530	1.2	68,915	1,491	1.6	2,462	41	66	922	74	67,987	--------	--------
Jasper	485	12	5,971	44,196	1.2	55,079	898	1.2	1,098	63	167	912	39	35,492	--------	--------
Jefferson	480	11	6,492	27,329	1.2	31,969	3	1.0	3	18	27	458	50	23,017	--------	--------
Johnson	1,992	16	31,854	45,738	1.3	58,508	856	1.1	927	100	150	949	58	55,270	--------	--------
Jones	1,193	16	18,529	48,010	1.4	66,010	296	1.3	381	42	63	578	80	46,032	--------	--------
Keokuk	1,389	16	21,537	40,211	1.2	49,519	208	1.1	229	42	137	576	58	33,393	--------	--------
Kossuth	230	19	4,475	28,732	1.1	31,038	51,385	1.0	51,270	101	231	1,913	58	111,065	1,232	7,738
Lee	4,928	17	83,160	34,313	1.1	36,347	93	1.8	172	81	162	1,115	46	50,887	--------	--------
Linn	1,438	15	21,070	49,970	1.2	59,748	2,837	1.1	3,162	23	57	1,131	61	72,688	--------	--------
Louisa	2,090	14	29,737	16,761	1.5	25,697	799	1.0	827	154	286	242	62	14,002	--------	--------
Lucas	130	16	2,052	33,451	1.0	34,222	156	1.0	165	28	74	395	45	17,620	--------	--------
Lyon	549	10	6,019	10,413	1.1	11,214	8,784	1.3	10,919	733	1,397	2,177	81	176,836	50	525
Madison	337	16	5,415	32,010	1.4	44,723	911	1.4	1,272	78	189	611	40	24,521	--------	--------
Mahaska	635	15	9,833	33,887	1.2	40,783	375	1.3	473	98	225	677	25	16,972	3	3
Marion	520	17	8,891	27,719	1.3	36,503	288	1.2	351	60	133	514	29	14,889	--------	--------

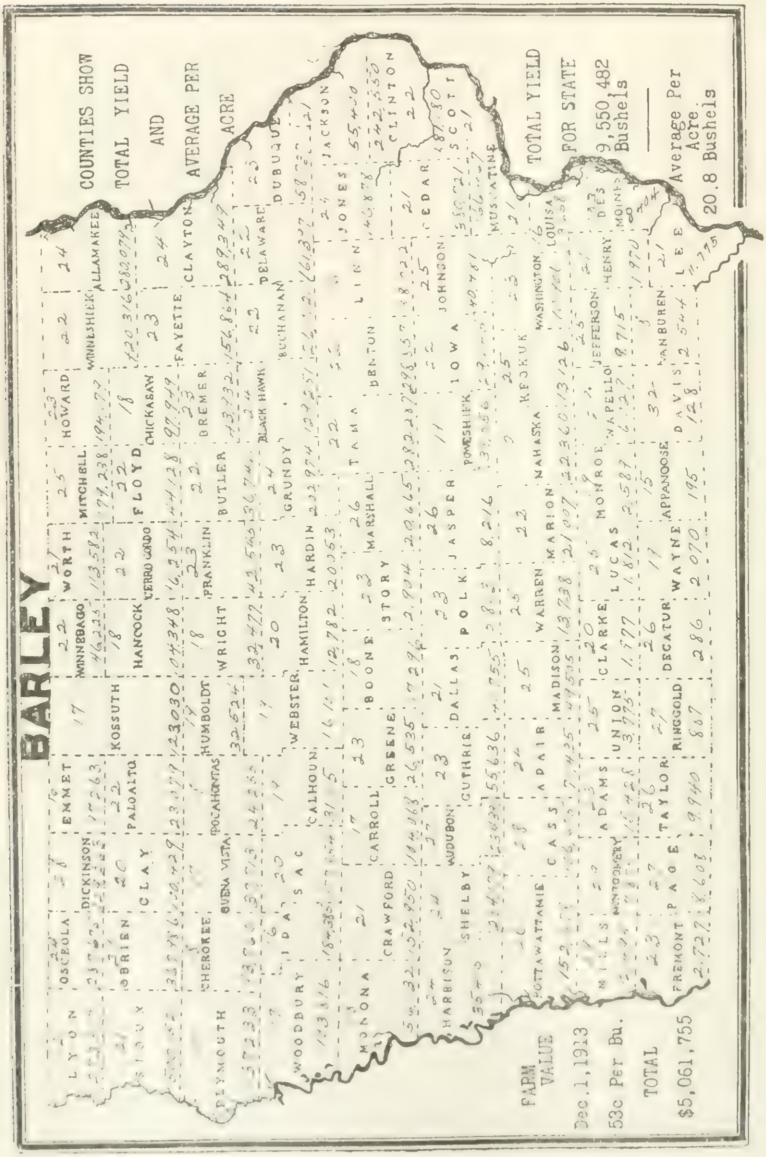
Marshall	120	17	2,049	35,129	1.5	16,130	825	1.0	850	57	23	1,479	10	58,888	----	----
Mills	513	19	9,610	13,577	1.2	16,847	4,327	1.4	6,144	8,559	22,867	565	68	51,466	----	----
Mitchell	254	17	4,394	25,073	1.4	34,137	2,771	0.9	2,489	11	16	2,668	83	222,312	1,737	17,353
Monona	239	14	3,452	9,622	1.4	13,329	17,110	1.3	22,632	8,222	20,771	867	45	39,332	----	----
Monroe	317	18	5,835	32,388	0.9	30,961	127	0.4	46	37	53	181	46	8,404	----	----
Montgomery	501	19	9,571	22,194	1.3	28,420	684	1.7	1,139	2,711	4,510	489	45	22,627	----	----
Muscatine	2,761	11	29,924	27,152	1.2	32,505	958	1.0	1,005	166	499	2,384	76	131,117	----	----
O'Brien	77	23	1,740	22,251	1.1	24,631	8,987	1.1	9,899	287	495	4,559	28	126,781	116	937
Osceola	326	20	6,445	11,198	1.0	11,616	11,431	1.1	12,146	41	93	1,064	88	93,070	6.8	5,212
Page	997	22	22,012	32,630	1.2	40,375	1,038	1.4	1,451	1,405	2,992	1,096	29	31,899	----	----
Palo Alto	162	15	2,513	10,782	1.0	11,275	33,946	1.0	33,887	50	71	775	53	40,791	285	1,749
Plymouth	119	16	1,922	24,255	1.2	29,981	22,146	1.1	24,932	4,092	9,538	2,196	45	18,471	26	29
Pocahontas	170	26	4,442	15,321	1.1	16,837	19,757	1.0	19,357	44	121	1,071	17	50,239	504	2,432
Polk	202	15	2,953	25,539	1.2	32,390	3,177	1.0	3,231	318	804	1,838	24	41,314	----	----
Pottawattamie	937	18	16,498	33,079	1.2	41,516	9,498	1.5	11,561	14,558	33,572	2,346	51	118,797	----	----
Poweshiek	153	16	7,131	31,003	1.3	43,131	571	0.5	282	59	122	906	39	35,131	----	----
Ringgold	192	15	2,926	11,399	1.0	46,206	140	1.0	147	59	105	195	53	10,342	----	----
Sac	63	18	1,105	28,521	1.3	37,644	8,622	1.1	9,843	289	723	979	38	56,989	29	196
Scott	3,012	15	45,599	31,311	1.4	41,812	2,622	1.3	3,401	326	1,159	6,419	51	325,033	----	----
Shelby	294	17	5,309	30,989	1.2	37,913	5,563	1.7	9,630	1,745	3,115	1,170	49	57,015	----	----
Sioux	40	19	744	16,581	1.1	18,712	19,011	1.2	22,046	1,839	4,179	3,275	40	131,234	88	808
Story	73	20	1,110	29,536	1.3	39,613	6,187	1.0	6,329	177	153	400	16	18,307	----	----
Tama	311	14	4,401	46,392	1.3	57,035	2,359	1.2	2,844	80	141	1,691	55	92,618	----	----
Taylor	657	19	11,719	31,171	1.6	36,191	622	1.3	807	248	571	355	67	23,949	----	----
Union	199	18	3,184	29,767	1.2	33,937	766	1.4	1,051	37	88	1,514	25	37,427	----	----
Van Buren	1,177	15	17,696	31,869	1.4	34,957	40	1.5	60	178	335	240	56	13,383	----	----
Wapello	1,310	17	22,645	32,599	1.0	32,187	25	1.0	23	31	56	545	54	29,606	----	----
Warren	458	18	8,090	38,486	1.3	50,178	524	1.4	736	81	174	397	32	12,736	----	----
Washington	580	15	8,647	36,351	1.3	46,114	7	1.3	9	18	48	144	67	29,841	----	----
Wayne	611	17	10,611	44,106	0.9	39,370	100	1.2	120	31	51	183	74	13,591	----	----
Webster	51	21	1,069	23, 25	1.2	28,111	23,111	1.0	22,593	136	417	858	41	33,984	399	2,428
Winebago	44	16	717	13,689	1.4	19,455	25,759	1.2	31,252	52	82	1,196	70	83,492	761	6,273
Winneshiek	1,581	16	21,062	50,926	1.3	67,285	5,239	1.1	5,970	62	99	1,010	99	99,033	1,135	8,972
Woodbury	55	16	912	24,468	1.3	31,772	13,433	1.4	18,966	8,800	23,511	1,573	72	112,087	----	----
Worth	296	12	3,666	17,189	1.3	23,095	17,217	1.1	20,608	57	98	658	75	49,922	2,073	19,570
Wright	77	21	1,853	26,071	1.1	29,271	12,565	0.9	11,172	18	16	820	51	41,960	179	870
Total	71,592	15.8	1,179,307	2,959,960	1.2	3,568,590	722,218	1.1	794,112	79,769	188,941	112,314	52.2	5,865,140	15,462	121,869

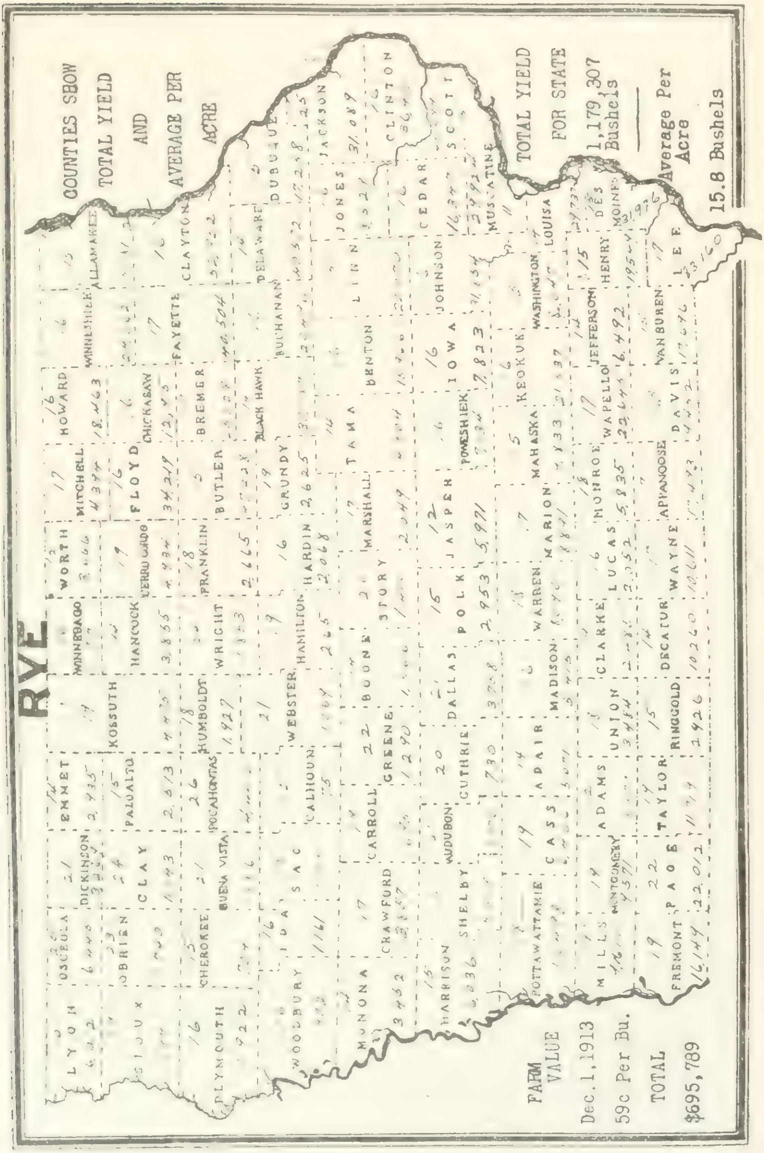

CORN
COUNTIES SHOW TOTAL YIELD AND AVERAGE PER ACRE
TOTAL YIELD FOR STATE 342,158,425 Bushels.
Average per Acre 37.3 Bushels
FARM VALUE Dec. 1, 1913 59c per bu.
TOTAL $201,873,470
LYON
OSCEOLA
DICKINSON
EMMET
KOSSUTH
WINNEBAGO
WORTH
MITCHELL
HOWARD
WINNESHIEK
ALLAMAKEE
SIOUX
O'BRIEN
CLAY
PALOALTO
HANCOCK
CERRO GORDO
FLOYD
CHICKASAW
FAYETTE
CLAYTON
PLYMOUTH
CHEROKEE
BUENA VISTA
POCAHONTAS
HUMBOLDT
WRIGHT
FRANKLIN
BUTLER
BREMER
BLACK HAWK
BUCHANAN
DELAWARE
DUBUQUE
WOODBURY
IDA
SAC
CALHOUN
WEBSTER
HAMILTON
HARDIN
GRUNDY
TAMA
BENTON
LINN
JONES
JACKSON
MONONA
CRAWFORD
CARROLL
GREENE
BOONE
STORY
MARSHALL
CEDAR
CLINTON
HARRISON
SHELBY
AUDUBON
GUTHRIE
DALLAS
POLK
JASPER
POWESHIEK
IOWA
JOHNSON
SCOTT
MUSCATINE
POTTAWATTAMIE
CASS
ADAIR
MADISON
WARREN
MARION
MAHASKA
KEOKUK
WASHINGTON
LOUISA
MILLS
MONTGOMERY
ADAMS
UNION
CLARKE
LUCAS
MONROE
WAPELLO
JEFFERSON
HENRY
DES MOINES
FREMONT
PAGE
TAYLOR
RINGGOLD
DECATUR
WAYNE
APPANOOSE
DAVIS
VAN BUREN
LEE

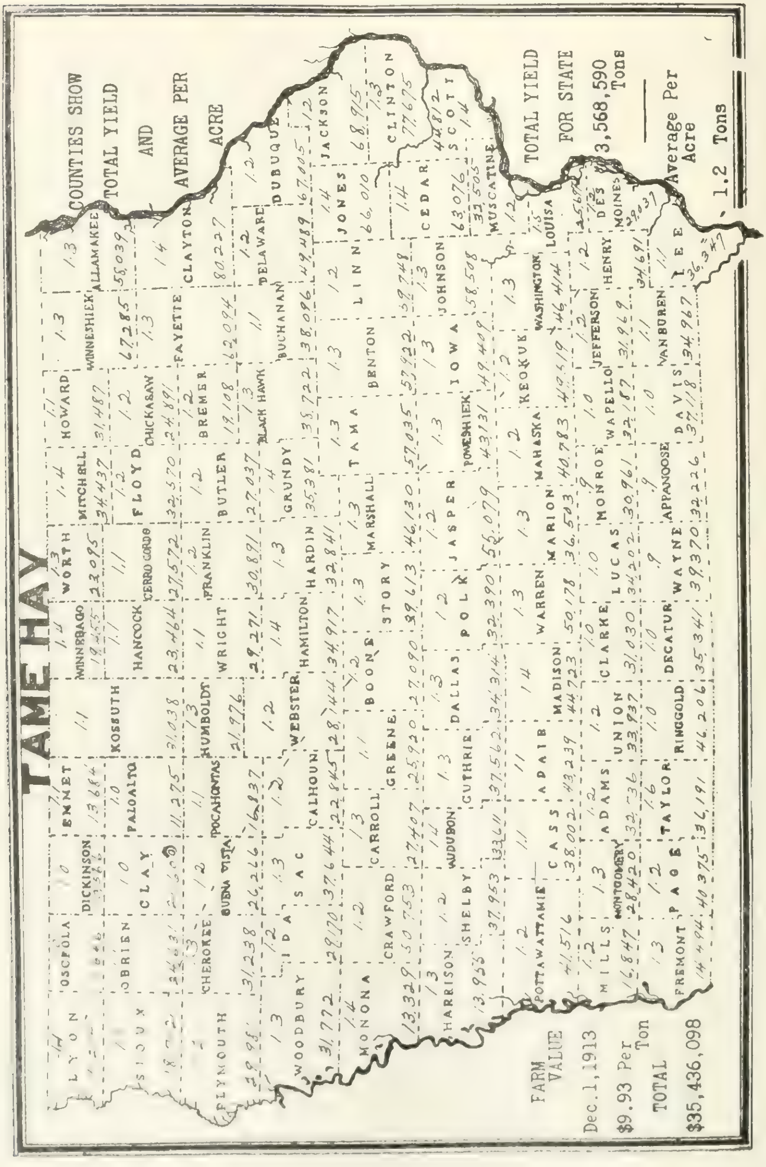

OATS
COUNTIES SHOW
TOTAL YIELD
AND
AVERAGE PER
ACRE
TOTAL YIELD
FOR STATE
184,[illegible]0,993
Bushels
Average per
Acre
35.4 Bushels
FARM
VALUE
Dec. 1, 1913
34c Per Bu
TOTAL
$62,730,337
LYON
OSCEOLA
DICKINSON
EMMET
KOSSUTH
WINNEBAGO
WORTH
MITCHELL
HOWARD
WINNESHIEK
ALLAMAKEE
SIOUX
OBRIEN
CLAY
PALOALTO
HANCOCK
CERRO GORDO
FLOYD
CHICKASAW
FAYETTE
CLAYTON
PLYMOUTH
CHEROKEE
BUENA VISTA
POCAHONTAS
HUMBOLDT
WRIGHT
FRANKLIN
BUTLER
BREMER
BLACK HAWK
BUCHANAN
DELAWARE
DUBUQUE
WOODBURY
IDA
SAC
CALHOUN
WEBSTER
HAMILTON
HARDIN
GRUNDY
TAMA
BENTON
LINN
JONES
JACKSON
CLINTON
MONONA
CRAWFORD
CARROLL
GREENE
BOONE
STORY
MARSHALL
CEDAR
SCOTT
HARRISON
SHELBY
AUDUBON
GUTHRIE
DALLAS
POLK
JASPER
POWESHIEK
IOWA
JOHNSON
MUSCATINE
POTTAWATTAMIE
CASS
ADAIR
MADISON
WARREN
MARION
MAHASKA
KEOKUK
WASHINGTON
LOUISA
MILLS
MONTGOMERY
ADAMS
UNION
CLARKE
LUCAS
MONROE
WAPELLO
JEFFERSON
HENRY
DES MOINES
FREMONT
PAGE
TAYLOR
RINGGOLD
DECATUR
WAYNE
APPANOOSE
DAVIS
VAN BUREN
LEE


SPRING WHEAT
COUNTIES SHOW TOTAL YIELD AND AVERAGE PER ACRE
TOTAL YIELD FOR STATE 4,137,995 Bushels
Average Per Acre 15 Bushels
FARM VALUE Dec. 1, 1913 75c Per Bu.
TOTAL $3,103,496


WINTER WHEAT
COUNTIES SHOW TOTAL YIELD AND AVERAGE PER ACRE.
TOTAL YIELD FOR STATE 12,210,812 Bushels
Average Per Acre 23.2 Bushels
FARM VALUE Dec. 1, 1913 77c Per Bu
TOTAL $9,402,325
LYON
OSCEOLA
DICKINSON
EMMET
KOSSUTH
WINNEBAGO
WORTH
MITCHELL
HOWARD
WINNESHIEK
ALLAMAKEE
SIOUX
OBRIEN
CLAY
PALOALTO
HANCOCK
CERRO GORDO
FLOYD
CHICKASAW
FAYETTE
CLAYTON
PLYMOUTH
CHEROKEE
BUENA VISTA
POCAHONTAS
HUMBOLDT
WRIGHT
FRANKLIN
BUTLER
BREMER
BLACK HAWK
BUCHANAN
DELAWARE
DUBUQUE
WOODBURY
IDA
SAC
CALHOUN
WEBSTER
HAMILTON
HARDIN
GRUNDY
TAMA
BENTON
LINN
JONES
JACKSON
CLINTON
MONONA
CRAWFORD
CARROLL
GREENE
BOONE
STORY
MARSHALL
CEDAR
SCOTT
HARRISON
SHELBY
AUDUBON
GUTHRIE
DALLAS
POLK
JASPER
POWESHIEK
IOWA
JOHNSON
MUSCATINE
POTTAWATTAMIE
CASS
ADAIR
MADISON
WARREN
MARION
MAHASKA
KEOKUK
WASHINGTON
LOUISA
MILLS
MONTGOMERY
ADAMS
UNION
CLARKE
LUCAS
MONROE
WAPELLO
JEFFERSON
HENRY
DES MOINES
FREMONT
PAGE
TAYLOR
RINGGOLD
DECATUR
WAYNE
APPANOOSE
DAVIS
VAN BUREN
LEE


BARLEY
COUNTIES SHOW TOTAL YIELD AND AVERAGE PER ACRE
TOTAL YIELD FOR STATE 9,550,482 Bushels
Average Per Acre 20.8 Bushels
FARM VALUE Dec.1,1913
53c Per Bu.
TOTAL $5,061,755


RYE
COUNTIES SHOW TOTAL YIELD AND AVERAGE PER ACRE
TOTAL YIELD FOR STATE 1,179,307 Bushels
Average Per Acre 15.8 Bushels
FARM VALUE Dec. 1, 1913 59c Per Bu.
TOTAL $695,789
LYON
OSCEOLA
DICKINSON
EMMET
KOSSUTH
WINNEBAGO
WORTH
MITCHELL
HOWARD
WINNESHIEK
ALLAMAKEE
SIOUX
OBRIEN
CLAY
PALOALTO
HANCOCK
CERRO GORDO
FLOYD
CHICKASAW
FAYETTE
CLAYTON
PLYMOUTH
CHEROKEE
BUENA VISTA
POCAHONTAS
HUMBOLDT
WRIGHT
FRANKLIN
BUTLER
BREMER
BLACK HAWK
BUCHANAN
DELAWARE
DUBUQUE
WOODBURY
IDA
SAC
CALHOUN
WEBSTER
HAMILTON
HARDIN
GRUNDY
TAMA
BENTON
LINN
JONES
JACKSON
MONONA
CRAWFORD
CARROLL
GREENE
BOONE
STORY
MARSHALL
CEDAR
CLINTON
HARRISON
SHELBY
AUDUBON
GUTHRIE
DALLAS
POLK
JASPER
POWESHIEK
IOWA
JOHNSON
SCOTT
MUSCATINE
POTTAWATTAMIE
CASS
ADAIR
MADISON
WARREN
MARION
MAHASKA
KEOKUK
WASHINGTON
LOUISA
MILLS
MONTGOMERY
ADAMS
UNION
CLARKE
LUCAS
MONROE
WAPELLO
JEFFERSON
HENRY
DES MOINES
FREMONT
PAGE
TAYLOR
RINGGOLD
DECATUR
WAYNE
APPANOOSE
DAVIS
VAN BUREN
LEE



TAME HAY

COUNTIES SHOW TOTAL YIELD AND AVERAGE PER ACRE

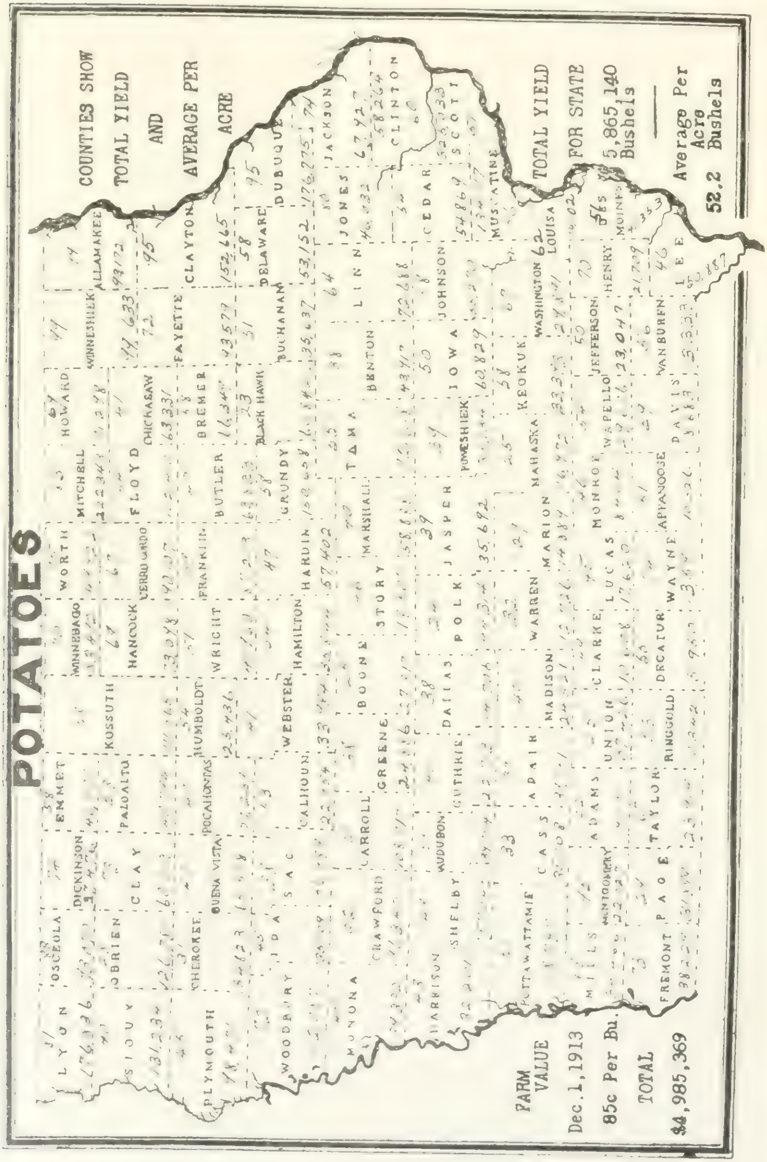
TOTAL YIELD FOR STATE 3,568,590 Tons

Average Per Acre 1.2 Tons

FARM VALUE Dec. 1, 1913 $9.93 Per Ton

TOTAL $35,436,098

LYON 1.4
OSCEOLA 1.0
DICKINSON
EMMET 1.1 13,684
KOSSUTH 1.1
WINNEBAGO 1.4 19,455
WORTH 1.3 22,095
MITCHELL 1.4 34,437
HOWARD 1.1 31,487
WINNESHIEK 1.3 67,285
ALLAMAKEE 1.3 55,039
SIOUX 1.1
OBRIEN
CLAY 1.0
PALO ALTO 1.0
HANCOCK 1.1
CERRO GORDO 1.1
FLOYD 1.2
CHICKASAW 1.2
FAYETTE 1.3
CLAYTON 1.4 80,227
PLYMOUTH
CHEROKEE 1.3
BUENA VISTA 1.2
POCAHONTAS 1.1 11,275
HUMBOLDT 1.3 31,038
WRIGHT 1.1 23,464
FRANKLIN 1.2 27,572
BUTLER 1.2 32,570
BREMER 1.2 24,891
BLACK HAWK 1.3 19,108
BUCHANAN 1.1 62,094
DELAWARE 1.2 80,227
DUBUQUE 1.2
WOODBURY 1.3 31,772
IDA 1.2 31,238
SAC 1.3 26,266
CALHOUN 1.2 16,837
WEBSTER 1.2 21,976
HAMILTON 1.4 29,271
HARDIN 1.3 30,891
GRUNDY 1.4 27,037
TAMA 1.3 35,381
BENTON 1.3 35,722
LINN 1.2 38,096
JONES 1.4 49,489
JACKSON 1.2 67,005
MONONA 1.4 31,772
CRAWFORD 1.2 28,170
CARROLL 1.3 37,644
GREENE 1.1 22,845
BOONE 1.2 28,444
STORY 1.3 34,917
MARSHALL 1.3 32,841
CLINTON 1.3 68,915
HARRISON 1.3 13,329
SHELBY 1.2 30,753
AUDUBON 1.4 27,407
GUTHRIE 1.3 25,920
DALLAS 1.3 27,090
POLK 1.2 39,613
JASPER 1.2 46,130
POWESHIEK 1.3 57,035
IOWA 1.3 57,922
JOHNSON 1.3 59,748
CEDAR 1.4 66,010
SCOTT 1.4 77,675
POTTAWATTAMIE 1.2 13,955
CASS 1.1 37,953
ADAIR 1.1 33,611
MADISON 1.4 37,562
WARREN 1.3 34,314
MARION 1.3 32,390
MAHASKA 1.2 55,079
KEOKUK 1.3 43,131
WASHINGTON 1.5 49,409
MUSCATINE 1.2 58,508
LOUISA 44,812
MILLS 1.2 41,516
MONTGOMERY 1.3 38,002
ADAMS 1.2 43,239
UNION 1.2 44,723
CLARKE 1.0 50,178
LUCAS 1.0 36,503
MONROE .9 40,783
WAPELLO 1.0 49,519
JEFFERSON 1.2 46,414
HENRY 1.2
DES MOINES 1.2 25,674
FREMONT 1.3 16,847
PAGE 1.2 28,420
TAYLOR 1.6 32,736
RINGGOLD 1.0 33,937
DECATUR 1.0 31,030
WAYNE .9 34,202
APPANOOSE .9 30,961
DAVIS 1.0 32,187
VAN BUREN 1.1 31,969
LEE 1.1 34,691
14,494 40,375 34,191 46,206 35,341 39,370 32,226 37,118 34,967 36,377 29,031 33,505 63,076 44,812


POTATOES
COUNTIES SHOW TOTAL YIELD AND AVERAGE PER ACRE
TOTAL YIELD FOR STATE 5,865,140 Bushels
Average Per Acre 52.2 Bushels
FARM VALUE Dec. 1, 1913
85c Per Bu.
TOTAL $4,985,369
LYON
OSCEOLA
DICKINSON
EMMET
KOSSUTH
WINNEBAGO
WORTH
MITCHELL
HOWARD
WINNESHIEK
ALLAMAKEE
SIOUX
OBRIEN
CLAY
PALOALTO
HANCOCK
CERRO GORDO
FLOYD
CHICKASAW
FAYETTE
CLAYTON
PLYMOUTH
CHEROKEE
BUENA VISTA
POCAHONTAS
HUMBOLDT
WRIGHT
FRANKLIN
BUTLER
BREMER
BLACK HAWK
BUCHANAN
DELAWARE
DUBUQUE
WOODBURY
IDA
SAC
CALHOUN
WEBSTER
HAMILTON
HARDIN
GRUNDY
TAMA
BENTON
LINN
JONES
JACKSON
CLINTON
MONONA
CRAWFORD
CARROLL
GREENE
BOONE
STORY
MARSHALL
HARRISON
SHELBY
AUDUBON
GUTHRIE
DALLAS
POLK
JASPER
POWESHIEK
IOWA
JOHNSON
CEDAR
SCOTT
MUSCATINE
POTTAWATTAMIE
CASS
ADAIR
MADISON
WARREN
MARION
MAHASKA
KEOKUK
WASHINGTON
LOUISA
MILLS
MONTGOMERY
ADAMS
UNION
CLARKE
LUCAS
MONROE
WAPELLO
JEFFERSON
HENRY
DES MOINES
FREMONT
PAGE
TAYLOR
RINGGOLD
DECATUR
WAYNE
APPANOOSE
DAVIS
VAN BUREN
LEE

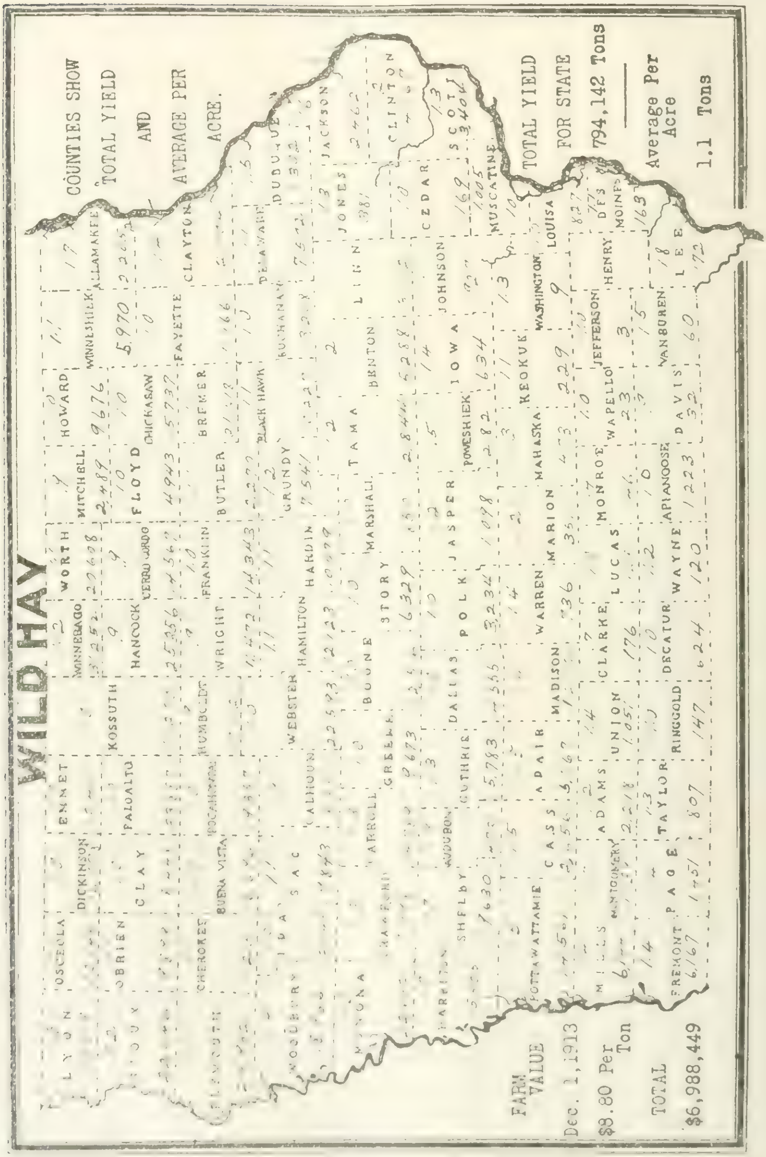

WILD HAY
COUNTIES SHOW TOTAL YIELD AND AVERAGE PER ACRE.
TOTAL YIELD FOR STATE 794,142 Tons
Average Per Acre 1.1 Tons
FARM VALUE Dec. 1, 1913 $8.80 Per Ton
TOTAL $6,988,449

TABLE NO. 4

Number of horses all ages, mules all ages, and number of swine July 1, 1913. Number of swine lost from hog cholera, 1913. Number dairy cows kept for milk, number other cattle not kept for milk and total number cattle all ages. Number sheep kept on farms, number shipped in for feeding and number sold for slaughter. Number pounds wool clipped. Total number all varieties poultry on farms July 1, 1913, and total number dozen eggs received (estimated) by counties for the year of 1913.

Counties	Horses (all ages)	Mules (all ages)	Hogs on farm July 1, 1913	Hogs lost from hog cholera 1913	Cattle			Sheep				Poultry	
					Dairy cows and heifers kept for milk	Other cattle not kept for milk	Cattle all ages	No. sheep kept on farms	No. sheep shipped in for feeding	No. sheep sold for slaughter	No. pounds wool clipped	No. all varieties on farms July 1, 1913	No. dozen eggs received (estimated)
Adair	17,476	1,177	123,569	32,151	10,611	25,155	47,658	9,629	8,674	13,818	54,267	144,771	[illegible]
Adams	15,121	1,158	81,896	12,080	5,897	[illegible]	32,446	9,946	1,968	6,100	11,495	[illegible]	[illegible]
Allamakee	11,724	92	67,294	993	15,877	26,271	43,163	7,222	125	4,242	41,189	[illegible]	[illegible]
Appanoose	9,883	851	55,542	1,958	7,189	13,648	21,533	16,068	2,293	10,916	[illegible]	[illegible]	[illegible]
Audubon	[illegible]	351	94,774	29,716	10,507	27,382	37,889	2,445	3,898	1,627	14,916	[illegible]	[illegible]
Benton	[illegible]	546	124,075	25,770	11,845	40,617	52,475	6,336	6,685	8,578	29,785	[illegible]	[illegible]
Black Hawk	[illegible]	[illegible]	92,020	26,187	16,997	26,843	46,798	[illegible]	316	918	10,630	[illegible]	[illegible]
Boone	[illegible]	366	87,811	25,810	12,084	[illegible]	37,118	1,588	1,925	2,842	[illegible]	[illegible]	[illegible]
Bremer	[illegible]	87	67,557	8,250	19,499	[illegible]	37,741	[illegible]	8	[illegible]	9,884	[illegible]	[illegible]
Buchanan	[illegible]	278	94,894	22,117	11,154	[illegible]	[illegible]	[illegible]	371	[illegible]	[illegible]	[illegible]	[illegible]
Buena Vista	[illegible]	[illegible]	118,910	68,786	11,497	[illegible]	[illegible]	2,016	1,772	[illegible]	7,091	[illegible]	[illegible]
Butler	[illegible]	256	[illegible]	37,211	[illegible]	[illegible]	[illegible]	3,712	723	[illegible]	[illegible]	[illegible]	[illegible]
Calhoun	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1,617	1,892	[illegible]	11,189	[illegible]	[illegible]
Carroll	[illegible]	661	99,415	39,318	12,661	18,568	[illegible]	2,086	2,061	[illegible]	[illegible]	[illegible]	[illegible]
Cass	[illegible]	1,182	[illegible]	42,763	8,645	28,878	43,651	9,896	11,109	11,521	12,942	411,417	[illegible]
Cedar	20,911	758	134,118	42,779	9,938	34,735	48,174	11,518	22,488	[illegible]	[illegible]	[illegible]	[illegible]
Cerro Gordo	[illegible]	167	82,952	[illegible]	12,589	25,848	43,041	2,400	1,731	1,680	[illegible]	[illegible]	[illegible]
Cherokee	[illegible]	118	[illegible]	63,293	[illegible]	31,876	46,058	1,745	8,947	[illegible]	[illegible]	[illegible]	[illegible]
Chickasaw	[illegible]	[illegible]	[illegible]	10,595	16,787	[illegible]	[illegible]	2,287		[illegible]	[illegible]	[illegible]	[illegible]
Clark	[illegible]	[illegible]	[illegible]	4,918	[illegible]	19,892	25,915	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Clay	[illegible]	[illegible]	[illegible]	51,875	10,694	30,410	41,104	2,475	[illegible]	1,084	[illegible]	[illegible]	[illegible]
Clayton	[illegible]	68	[illegible]	1,750	[illegible]	[illegible]	[illegible]	8,157	625	[illegible]	48,874	[illegible]	[illegible]
Clinton	18,716	[illegible]	[illegible]	[illegible]	17,252	[illegible]	58,196	[illegible]	6,654	8,247	[illegible]	[illegible]	[illegible]
Crawford	15,081	[illegible]	163,748	[illegible]	12,667	16,086	[illegible]	[illegible]	6,932	2,768	[illegible]	[illegible]	[illegible]
Dallas	16,571	870	96,253	18,436	9,055	26,816	[illegible]	[illegible]	[illegible]	6,491	21,781	[illegible]	[illegible]
Davis	11,296	744	41,441	180	7,207	[illegible]	[illegible]	[illegible]	2,431	[illegible]	[illegible]	[illegible]	[illegible]
Decatur	[illegible]	[illegible]	58,368	1,257	6,667	16,765	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Delaware	[illegible]	[illegible]	120,379	33,348	21,155	24,124	45,279	[illegible]	4,725	[illegible]	[illegible]	[illegible]	[illegible]

TABLE 4—CONTINUED

Counties	Horses (all ages)	Mules (all ages)	Hogs on farm July 1, 1913	Hogs lost from hog cholera	Cattle			Sheep				Poultry	
					Dairy cows and heifers kept for milk	Other cattle not kept for milk	Cattle (all ages)	No. sheep kept on farms	No. sheep shipped in for feeding	No. sheep sold for slaughter	No. pounds wool clipped	No. all varieties on farms July 1, 1913	No. dozen eggs received (estimated)
Des Moines	12,537	410	61,188	9,353	7,384	13,212	20,596	2,642	1,059	2,475	15,814	364,660	801,158
Dickinson	6,131	150	38,414	17,716	5,517	12,177	17,053	1,829	1,430	762	12,772	124,834	381,552
Dubuque	11,449	84	99,855	23,299	16,879	20,886	38,891	4,292	490	2,735	29,069	330,739	840,289
Emmet	8,149	166	44,296	18,505	6,815	15,244	22,391	1,654	15	689	9,515	172,517	514,417
Fayette	17,628	209	114,154	6,158	24,815	38,126	60,459	5,078	247	1,502	26,586	699,391	1,752,228
Floyd	13,446	169	76,112	18,046	10,816	27,584	39,155	4,899	2,247	3,005	31,569	329,777	1,021,840
Franklin	15,430	254	117,669	31,367	13,114	33,219	46,665	3,759	20,527	18,550	27,087	416,182	1,112,922
Fremont	11,858	2,966	58,947	7,271	3,620	15,411	23,690	1,029	1,627	1,416	1,755	289,439	689,889
Greene	16,334	522	66,584	26,568	8,495	24,514	35,948	2,806	16,161	10,787	18,636	404,215	1,168,329
Grundy	14,097	246	88,193	23,618	10,782	33,581	44,636	1,769	3,370	4,170	10,345	356,420	1,304,128
Guthrie	16,912	613	96,816	30,932	10,042	34,658	44,760	5,221	3,132	2,482	20,739	431,268	898,818
Hamilton	17,068	451	94,920	35,526	11,376	23,298	36,694	4,317	2,170	1,800	16,226	424,254	1,011,360
Hancock	13,239	281	78,117	38,672	12,567	23,888	36,455	2,209	1,368	1,893	13,433	338,317	750,892
Hardin	13,082	273	76,887	28,015	11,668	20,112	37,513	2,707	3,415	4,413	19,598	476,364	1,814,405
Harrison	13,502	1,257	97,172	20,122	9,006	17,846	26,851	1,762	9,615	9,050	23,708	368,753	1,109,274
Henry	12,428	463	57,796	2,861	5,586	13,057	22,236	20,745	441	10,060	105,893	317,167	1,112,266
Howard	10,493	94	61,092	7,223	13,444	22,859	35,903	5,692	197	2,531	27,618	288,716	724,728
Humboldt	10,315	195	80,836	46,225	8,115	19,981	29,564	1,125	1,815	1,457	6,232	254,640	657,435
Ida	11,276	582	101,686	52,358	6,492	26,973	34,858	1,658	4,811	5,299	4,705	272,847	600,382
Iowa	16,963	894	118,876	3,656	10,360	28,007	46,668	3,643	237	2,977	21,193	416,862	1,207,312
Jackson	12,386	180	93,911	3,502	14,798	29,300	44,726	2,922	14	1,364	17,551	484,132	817,709
Jasper	21,217	741	141,360	48,499	9,639	37,323	46,959	5,916	3,843	4,224	30,220	577,281	1,468,114
Jefferson	12,213	367	53,867	3,207	6,666	13,919	20,866	8,597	180	3,284	47,959	321,292	1,012,656
Johnson	16,507	700	122,361	17,646	8,980	20,174	37,380	5,297	1,482	3,788	38,111	496,219	1,293,286
Jones	14,982	390	114,700	9,470	15,238	29,291	49,603	3,242	2,399	3,639	20,694	386,022	1,233,190
Keokuk	18,376	741	143,592	20,620	9,005	21,212	36,163	5,334	5,013	6,301	37,638	546,390	1,633,258
Kossuth	21,931	358	136,664	78,295	19,163	31,196	59,260	4,785	12,781	9,645	31,964	627,290	1,542,273
Lee	12,401	714	47,580	6,978	7,973	14,420	22,390	22,024	2,487	12,256	157,764	312,467	933,259
Linn	19,557	431	125,416	24,196	15,691	31,183	46,526	8,719	3,394	6,374	44,946	534,823	1,341,716
Louisa	10,472	387	59,451	12,665	4,168	13,783	15,374	1,836	272	1,054	8,544	238,946	789,163
Lucas	9,081	567	41,243	1,001	5,771	15,135	22,094	15,453	9,302	16,028	67,373	293,057	782,809
Lyon	13,622	73	111,771	70,181	10,306	20,502	33,323	1,856	7,636	6,336	10,302	212,385	574,383
Madison	15,271	875	102,448	16,584	7,744	29,454	42,568	10,987	4,401	9,113	37,305	493,109	1,126,854

Mahaska	16,955	1,311	127,158	31,899	8,919	18,149	41,586	15,241	7,478	9,075	81,895	504,807	1,704,697
Marion	16,219	807	91,540	27,030	7,125	22,411	19,567	6,816	32,759	34,105	62,219	421,061	1,197,920
Marshall	17,059	1,115	111,888	18,253	10,601	28,579	[illegible]	7,251	[illegible]	[illegible]	29,776	458,300	1,031,870
Mills	8,410	1,071	79,158	16,037	4,438	15,843	25,042	600	15,039	19,811	2,570	243,457	598,647
Mitchell	11,125	97	66,807	15,830	12,610	14,029	31,076	3,129	1,449	2,000	12,059	326,618	1,059,664
Monona	13,770	1,081	99,290	57,085	8,045	21,878	24,923	971	8,049	4,807	4,195	451,496	1,098,388
Monroe	8,500	770	35,592	1,644	6,792	11,414	20,731	8,188	3,185	7,128	45,573	251,083	754,073
Montgomery	10,177	1,009	87,817	28,463	5,091	18,952	29,872	2,672	7,270	6,157	20,589	290,169	721,582
Muscatine	11,674	467	78,385	11,762	8,363	17,794	26,986	2,158	1,294	1,647	12,571	311,549	761,639
O'Brien	15,752	286	111,040	58,865	12,431	32,670	45,572	5,445	2,810	4,455	26,470	289,068	827,262
Osceola	9,441	149	60,983	36,020	7,508	17,127	25,189	2,781	2,969	5,338	11,962	179,158	787,065
Page	15,917	1,345	105,296	30,889	9,584	31,275	40,999	5,119	8,092	9,191	27,705	445,558	1,067,119
Palo Alto	11,581	104	76,098	46,269	12,691	21,838	30,042	1,145	499	547	8,030	225,622	1,140,131
Plymouth	20,754	445	171,911	165,005	13,207	46,534	59,742	2,545	1,168	1,213	9,956	422,197	1,166,052
Pocahontas	13,155	447	71,278	38,051	9,815	16,776	30,082	2,250	1,772	1,701	9,814	389,729	1,130,767
Polk	12,885	941	53,767	20,957	9,566	17,007	24,855	1,859	3,790	4,002	12,125	512,222	1,171,165
Pottawattamie	22,491	2,210	188,776	42,065	15,709	40,302	60,868	7,352	18,864	11,813	51,584	611,286	1,878,582
Poweshiek	18,792	764	130,514	24,952	9,030	29,485	45,062	4,574	2,078	3,587	17,767	452,551	972,550
Ringgold	13,313	1,302	67,375	8,625	8,347	15,944	33,405	8,508	269	5,901	49,900	418,319	1,169,421
Sac	17,350	461	121,722	67,715	9,212	31,640	43,102	1,763	7,856	9,663	29,297	346,441	846,044
Scott	11,847	523	85,009	71,869	14,004	17,838	34,501	1,042	777	935	8,291	357,695	1,251,731
Shelby	16,768	767	140,615	25,118	9,350	31,988	49,708	3,230	37,759	21,764	45,186	414,755	1,140,289
Sioux	24,884	317	170,141	123,161	16,425	30,451	61,121	2,082	3,900	3,552	7,559	327,113	1,170,072
Story	17,613	635	82,843	27,672	10,782	20,373	35,896	2,449	6,025	6,006	20,252	424,348	1,465,198
Tama	19,940	718	135,666	31,497	11,925	38,195	63,966	4,257	187	2,191	27,145	623,775	1,437,390
Taylor	14,190	1,154	84,554	18,062	6,938	25,490	32,729	10,256	6,327	11,003	78,051	501,324	1,044,825
Union	11,949	802	63,556	7,377	6,644	20,119	30,826	3,249	1,165	1,354	16,145	330,089	790,544
Van Buren	11,761	597	48,216	2,844	10,909	11,755	23,561	10,370	7,257	30,761	294,153	295,575	1,209,295
Wapello	10,585	576	58,869	7,606	7,959	12,642	21,597	9,370	1,855	7,793	59,979	354,451	823,196
Warren	15,742	694	89,302	18,270	8,761	25,549	35,376	6,951	7,972	8,771	39,372	327,813	1,084,619
Washington	15,410	911	121,485	21,433	6,732	23,512	51,827	5,415	2,147	4,924	25,944	436,223	1,235,122
Wayne	14,512	1,157	64,241	10,487	7,798	20,468	28,566	11,161	1,740	6,875	56,496	352,593	922,645
Webster	18,085	678	79,441	40,381	12,607	19,357	35,475	961	1,174	1,112	7,126	418,405	1,112,377
Winnebago	9,094	121	56,559	14,039	12,573	18,589	31,162	828	82	311	4,782	260,767	1,164,280
Winneshiek	16,970	76	110,287	3,543	21,724	32,904	57,446	12,436	751	6,459	66,506	411,859	1,275,887
Woodbury	20,392	1,141	122,980	61,998	11,244	34,099	46,454	2,631	5,217	5,028	16,400	388,117	1,330,677
Worth	9,163	99	56,958	16,427	12,066	19,883	33,575	1,438	1,283	514	7,025	239,739	685,433
Wright	14,563	289	87,061	49,718	10,198	23,030	33,237	4,714	5,258	4,239	17,038	295,970	781,990
Total	1,427,488	59,487	9,397,273	2,709,876	1,074,427	2,425,300	3,717,042	711,020	464,893	598,615	3,327,297	37,464,649	104,278,322

TABLE NO. 5

Acreage in sweet corn, pop corn, and acreage and total yield of timothy and clover seed, by counties, for the year 1913.

Counties	Sweet Corn		Pop Corn		Timothy Seed		Clover Seed	
	Acres	Tons gathered for canning	Acres	Total bushels	Acres	Total bushels	Acres	Total bushels
Adair	1	15	[illegible]	1,535	5,622	21,543	2,042	811
Adams	--			--	[illegible]	8,403	390	513
Allamakee	2	8	[illegible]	18	4,091	18,943	1,546	1,543
Appanoose	14	[illegible]	12	25	8,056	34,672	141	233
Audubon	104	274	2	35	1,385	4,788	225	354
Benton	[illegible]	11,839	[illegible]	[illegible]	[illegible]	7,353	1,210	1,389
Black Hawk	[illegible]	3,160	82	2,447	[illegible]	2,489	413	380
Boone	16	[illegible]	95	1,980	158	637	944	[illegible]
Bremer	[illegible]	1,478			216	996	47	10
Buchanan	145	[illegible]	1	[illegible]	770	3,684	34	24
Buena Vista	[illegible]	[illegible]	54	1,543	12	28	1,208	888
Butler	51	519	5	163	679	2,554	180	210
Calhoun	271	846	3	121	93	498	1,261	1,163
Carroll	13	5	81	2,870	429	1,804	1,537	1,744
Cass	10	[illegible]	[illegible]	1,650	928	3,702	1,233	1,371
Cedar	[illegible]	[illegible]	1	7	2,208	8,334	2,044	2,495
Cerro Gordo	11	1	52	92	[illegible]	2,094	1,014	[illegible]
Cherokee	2	31	[illegible]	[illegible]	71	224	2,539	1,741
Chickasaw			5	[illegible]	6,572	[illegible]	74	91
Clarke	13	22	9	38	[illegible]	[illegible]	1,668	[illegible]
Clay			19	[illegible]	1,315	4,043	[illegible]	578
Clayton	201	[illegible]	14	234	2,831	14,965	1,314	[illegible]
Clinton	3	[illegible]	1	31	731	2,684	1,413	[illegible]
Crawford			[illegible]	13,740	[illegible]	1,418	2,370	[illegible]
Dallas	[illegible]	[illegible]	20	[illegible]	183	1,085	1,828	[illegible]
Davis	[illegible]		3	55	[illegible]	39,487	327	521
Decatur	3	50	37	1,220	7,311	27,003	[illegible]	1,111
Delaware	244	[illegible]	1	54	1,153	4,810	133	252
Des Moines	55	56	1	10	832	3,147	3,195	1,492
Dickinson	4	51	14	[illegible]	941	2,690	116	482
Dubuque	[illegible]	409	4	150	[illegible]	4,589	686	[illegible]
Emmet	7	55	42	1,186	198	502	117	148
Fayette	336	1,192	14	513	4,160	18,313	402	[illegible]
Floyd	43	248	3	114	1,996	8,147	[illegible]	[illegible]
Franklin	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1,312	481	284
Fremont	319	333	2	17	161	777	654	[illegible]
Greene	1	30	177	3,824	245	[illegible]	381	344
Grundy	3		1	[illegible]	486	2,286	381	[illegible]
Guthrie			48	929	6,826	22,424	895	1,178
Hamilton	2		14	336	184	896	960	821
Hancock	[illegible]	[illegible]	33	957	170	457	567	523
Hardin					28	[illegible]	464	579
Harrison	2	[illegible]	[illegible]	[illegible]	106	376	678	543
Henry	[illegible]	[illegible]			[illegible]	3,261	2,826	[illegible]
Howard			[illegible]	[illegible]	6,766	[illegible]	220	174
Humboldt	[illegible]		5	[illegible]	[illegible]	338	781	[illegible]
Ida	13	137	[illegible]	[illegible]	242	817	[illegible]	[illegible]
Iowa	[illegible]	412	1	17	13,363	47,436	1,317	1,917
Jackson	2	[illegible]	1	1	[illegible]	[illegible]	2,336	[illegible]
Jasper	175	[illegible]	[illegible]	[illegible]	[illegible]	3,503	[illegible]	[illegible]
Jefferson	[illegible]	[illegible]	[illegible]	[illegible]	5,079	26,701	973	[illegible]
Johnson	[illegible]	1,172	[illegible]	[illegible]	[illegible]	7,827	2,661	[illegible]
Jones	[illegible]	125	3	113	688	4,503	1,750	3,040
Keokuk	5		[illegible]	[illegible]	1,773	7,068	2,450	2,981
Kossuth	8		[illegible]	[illegible]	[illegible]	1,036	[illegible]	[illegible]

TABLE NO. 5—CONTINUED

Counties	Sweet Corn		Pop Corn		Timothy Seed		Clover Seed	
	Acres	Tons gathered for canning	Acres	Total bushels	Acres	Total bushels	Acres	Total bushels
Lee	35	[illegible]	7	41	3,364	13,035	3,635	4,351
Linn	129	[illegible]	[illegible]	31	1,434	6,633	709	1,024
Louisa	[illegible]	697	[illegible]	[illegible]	518	2,069	1,345	1,293
Lucas	[illegible]	18	[illegible]	[illegible]	9,893	32,887	1,656	2,002
Lyon	1	40	4	[illegible]	60	172	173	171
Madison	4	42	[illegible]	100	2,066	8,953	3,189	4,258
Mahaska	13	13	1	15	467	1,419	5,433	6,499
Marion	—	—	—	—	[illegible]	3,467	[illegible]	4,762
Marshall	[illegible]	1,646	37	[illegible]	1,213	4,831	2,624	2,431
Mills	[illegible]	12	2	[illegible]	207	[illegible]	663	1,004
Mitchell	[illegible]	[illegible]	1	[illegible]	4,744	19,556	576	1,057
Monona	[illegible]	[illegible]	527	15,092	[illegible]	160	[illegible]	503
Monroe			1	12	2,540	10,208	536	634
Montgomery	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	2,081	1,591	1,736
Muscatine	77	[illegible]	28	835	545	2,170	823	1,540
O'Brien	7	[illegible]	246	[illegible]	871	2,616	1,246	1,024
Osceola	[illegible]	[illegible]	16	[illegible]	1,975	15,828	450	539
Page	[illegible]	35	12	[illegible]	492	1,831	2,343	3,194
Palo Alto			[illegible]	178	20	[illegible]	252	243
Plymouth	[illegible]	2,485	15	235	175	552	872	[illegible]
Pocahontas	1	—	1	1	7	265	770	940
Polk	324	859	169	3,857	109	470	1,710	1,651
Pottawattamie	[illegible]	[illegible]	53	1,480	803	2,868	2,046	1,832
Poweshiek	338	608	6	110	5,434	19,583	2,349	2,977
Ringgold	1	1	1	5	7,121	23,517	[illegible]	508
Sac	333	1,026	7,300	223,157	215	952	[illegible]	726
Scott	26	[illegible]	5	92	256	815	4,886	7,350
Shelby	28	62			465	1,636	2,379	2,131
Sioux	—	—	11	355	48	206	429	539
Story	—	—	1	[illegible]	334	1,507	567	429
Tama	395	[illegible]	[illegible]	[illegible]	2,145	11,607	2,286	2,646
Taylor	4	90	1	42	3,085	12,131	775	1,232
Union	[illegible]	[illegible]	[illegible]	[illegible]	5,674	22,615	904	1,134
Van Buren	70	[illegible]	1	69	8,617	[illegible]	1,861	2,292
Wapello	32	105	11	127	1,400	5,511	1,013	[illegible]
Warren	—	—	1	15	2,311	9,334	1,637	2,982
Washington	[illegible]	[illegible]	[illegible]	50	[illegible]	2,790	4,208	5,985
Wayne	—	—	[illegible]	[illegible]	21,315	71,896	1,034	1,250
Webster	[illegible]	1	[illegible]	387	136	[illegible]	297	197
Winnebago	[illegible]	1,335	1	50	[illegible]	923	219	327
Winneshiek	3	—	1	3	8,331	37,288	493	451
Woodbury	[illegible]	943	[illegible]	18,095	192	[illegible]	2,248	2,784
Worth	29	103	1	[illegible]	690	2,107	408	796
Wright	1	[illegible]	4	124	218	940	492	479
Totals	17,471	52,382	18,188	525,942	223,579	877,583	129,867	152,820

Glimpses of Crowd at the 1913 Iowa State Fair

PART XIV.

Report of Agricultural Conditions by County and District Agricultural Societies in Iowa, 1913.

ADAIR.

S. E. ALLEY, GREENFIELD, DECEMBER 8, 1913.

General Condition of Crops and Season—Season dry and crop conditions fair. Hay and small grains extra good; corn fair; potatoes and late garden very poor.

Corn—Quality very good with about 75 per cent of a crop. Yielding about 32½ bushels per acre on the average.

Oats—Quality very good and a very large yield, making on the average about 45 bushels per acre.

Wheat—Quality very good with an extra heavy yield, making on the average of 15 to 20 bushels for spring wheat and from 25 to 30 for winter wheat.

Rye—Not much raised.

Barley—Not much raised in the county but the crop was very good, yielding about 35 bushels per acre.

Flax—No flax raised in the county.

Buckwheat—No buckwheat raised in the county.

Millet—Very little grown.

Timothy—Very good crop, making about 1½ tons to the acre for hay and about 5 bushels per acre for seed.

Clover—Very good; yielding about 2 tons per acre for hay. Not much seed.

Prairie Hay—Not much left but the crop was very good.

Potatoes—Early ones fair; late ones very poor.

Vegetables—Early ones good but the late ones were poor.

Apples—Fair crop but most of them fell off the trees before they were ripe.

Other Fruits—Good crop of grapes, plums and peaches.

Cattle—A large number of cattle raised but not a very large number being fed. The market is very high and all cattle are in good condition.

Horses—A good many colts raised and they are of good quality. All horses are in good condition.

Swine—A large number of swine raised but cholera has taken a good many of them.

Lands—Well kept and in good demand. Land is rapidly rising in value and it is selling on the average of $100.00 or more per acre.

Report of Fair—No county fair held this year on account of failure in finances in 1912. It has not been decided whether there will be a fair held in 1914 or not.

ADAMS.

GEO. E. BLISS, CORNING, SEPTEMBER 20, 1913.

Corn—Owing to drouth corn will yield only a half crop. A great deal of it will be utilized in silos.

Oats—Average crop; yield about 40 bushels to the acre and excellent quality.

Wheat—Winter wheat a fine crop.

Rye—Just a small amount raised; yield about 30 bushels per acre.

Barley—Straw short but fair yield; about 35 bushels to the acre.

Flax—None raised in this locality.

Buckwheat—Not any.

Millet—Good crop; yield about 2 tons per acre and saved in excellent condition.

Sorghum—Good, but the acreage is growing smaller each year.

Timothy—Extra heavy crop and put up in good condition.

Clover—Good crop but small acreage. New seeding all killed by drouth.

Prairie Hay—Good crop; ground nearly all broken up in this county.

Other Grains and Grasses—Owing to abundant moisture in the spring all grains and grasses were fine.

Potatoes—Early ones good but no late ones to speak of.

Vegetables—Early ones fine; drouth cut down the supply of late vegetables.

Apples—Promised well but they are falling badly and the quality is poor.

Other Fruits—Fairly good; few berries of any kind on account of drouth.

Cattle—Are in good condition but not so many as usual.

Horses—Plentiful and in good condition. One sees more horses in the pastures than cattle.

Swine—Owing to cholera herds are being depleted.

Sheep—They are in good condition and there are more of them than any other domestic animal.

Poultry—Increased interest in poultry and large numbers raised; very little disease.

Bees—Have done extra well this year, making honey of very fine quality.

Drainage—Nearly all the farms are tiled in this county.

Other Industries—Very little manufacturing done in this locality. More farm machinery sold than usual.

Lands—Not many farms changing hands at present. Land is selling at from seventy-five to one hundred fifty dollars an acre.

Report of Fair—Held September 8-12. Only two days held this year on account of rain.

ALLAMAKEE.

GEO. S. HALL, WAUKON, OCTOBER 7, 1913.

General Condition of Crops and Season—Crop conditions were generally good. Our rainfalls were of a gentle nature and enough to supply plenty of moisture to make good crops.

Corn—Better than the average and will make an average yield.

Oats—The oat crop was good; that is, the yield was about 38 bushels per acre and the quality very good.

Wheat—Not much raised in this county and mostly winter wheat. The quality was good and the yield about 20 bushels per acre.

Rye—Good; a very small acreage but good quality.

Barley—Not a good crop as the weather was a little too hot just at the time it was filling. I think it would average about 28 bushels per acre.

Flax—Practically none.

Buckwheat—None that I know of.

Millet—I know of none.

Sorghum—Generally good.

Timothy—Good.

Clover—A fair crop of hay and quite a lot of it cut for seed. It yielded about 300 pounds per acre.

Prairie Hay—Not any.

Other Grains and Grasses—Pastures were good all season.

Potatoes—About one-half crop; not more than enough to supply this county.

Vegetables—Mostly good.

Apples—An abundance of all kinds.

Other Fruits—Plums scarce.

Cattle—Scarce but in good demand and in excellent condition. Our cattle are free from disease in so far as I can learn.

Horses—Plentiful and in good condition.

Swine—A good lot of pigs and no hog cholera that I know of in the county.

Sheep—Not many but they are in fine condition.

Poultry—Lots of poultry.

Bees—The honey output is large.

Drainage—This county has natural drainage and does not require much tilling.

Other Industries—The iron mining company located at Waukon employs about 75 men and will run day and night the balance of the season. The ore is of high grade and some of it will test 70 per cent iron.

Lands—Generally rolling and rough, ranging in price from $50.00 to $250.00 per acre.

Report of Fair—Held September 9, 10, 11 and 12. We had a good attendance but rain on Thursday spoiled our big day and caused us to run behind. Our exhibits were good in all lines.

AUDUBON.

S. C. CURTIS, AUDUBON, OCTOBER 20, 1913.

General Condition of Crops and Seanson—The general condition of crops was not normal on account of the continued hot and dry weather.

Corn—Will make about two-thirds of a crop where it has not been injured by hail.

Oats—Just a fair yield.

Wheat—A good crop, especially winter wheat. The quality was above the average.

Barley—A fair crop.

Sorghum—Very little grown.

Timothy—Did not seed very good but the hay crop was fair.

Clover—Fair yield and good quality.

Prairie Hay—Not any.

Potatoes—Very poor crop; potatoes are being shipped in.

Vegetables—Short crop.

Apples—Very good crop of apples.

Other Fruits—Lots of plums; fair crop of grapes.

Cattle—Very high, especially feeders. Not so many being fed as usual on account of the high cost of feeders and corn.

Horses—We have good horses but they are cleaned up every year by horse buyers and shipped out. The quality is getting better each year.

Swine—Lots of cholera; hogs have died by the hundreds.

Sheep—This industry is increasing year by year and quite a number are now being kept by the farmers.

Poultry—A great industry.

Bees—Not many.

Drainage—Natural.

Other Industries—Limited. We boast of one of the best sweet corn canning factories in western Iowa.

Lands—Land ranges from $125.00 to $250.00 per acre and advancing.

Report of Fair—Held September 23-27. On account of rain the first part of the week the fair was held over one day. We only had two real fair days.

BENTON.

SOL WHITE, VINTON, OCTOBER 16, 1913.

General Condition of Crops and Season—Dry season; fair crops.

Corn—Average 40 bushels.

Oats—Average 30 bushels.

Wheat—None.

Rye—Average 20 bushels.

Barley—Average 30 bushels.

Flax—None.

Buckwheat—None.

Millet—None.

Sorghum—None.

Timothy—Good crop.

Prairie Hay—None.

Potatoes—Very poor.

Vegetables—Fair.

Apples—Good.

Other Fruits—Berries good.

Cattle—High in price and about the average number.

Horses—Average; quality good.

Swine—Many thousands have died with cholera but there seems to be a good lot on hand.

Sheep—Small flocks; a good many shipped in for feeding.

Poultry—A great industry in this county.

Bees—Fair.

Drainage—Good.

Lands—Range from $175.00 to $250.00 per acre.

Report of Fair—Held September 9 to 12. Rained one day.

BLACK HAWK.

A. A. BURGER, COUNTY AGRICULTURIST, NOVEMBER 15, 1913.

Corn—The crop for the county is considerably below the average of last year. There seems to be considerable variation in different sections of the county, which no doubt can be accounted for by the difference in the character of the soil, some of it perhaps more subject to dry weather. Should say the corn crop of Black Hawk county was 20 per cent short of what it was last year.

Oats—A little above the crop of the average season but will fall short of the crop of last year. A very large percentage of the oats of the county was affected by smut.

Wheat—The best crop we have had for several years. In this section the season was one of the most favorable we have had for a fall wheat crop.

Rye—A little above the average for the entire county. On the more sandy lands some of the rye was a little light.

Barley—Just about an average crop with condition of the grain a little above the average. The drouth early in the fall made it possible to handle the grain without much loss.

Millet—In total yield the millet crop of the county was very good, perhaps a little above the average although some of the fields were injured by frost.

Sorghum—The crop was injured in many localities by the dry weather; consequently the average fell below the standard.

Timothy—A good crop harvested. The yield was considerably above the average and the hay secured was excellent.

Clover—One of the best clover crops that has been harvested for some years; the quality of the hay was excellent.

Prairie Hay—Not very much harvested. Most of the prairie hay was made from the drier, sandier lands and hence would not make an average crop.

Other Grains and Grasses—The early season crops yielded a little above the average while the late maturing crops would be regarded as a failure.

Potatoes—The crop was materially cut down by the dry weather. The average yield, with the exception of one or two years, is perhaps the lightest on record in the county. Fully 75 per cent of the farmers have shipped in potatoes.

Vegetables—Except for the very early vegetables and tomatoes, the vegetable crop was practically a failure.

Apples—The apple crop of the county was as good as it has ever been.

Other Fruits—With the exception of grapes the fruit crop was very short; in fact all that might be termed the short season fruits were a failure.

Cattle—The number of beef cattle in the county seems to be on the decline. The number of feeders brought in is little less than the average. The dairy cattle industry seems to be on the increase, even in those sections where fat cattle have been fed. There is a material increase in the number of pure bred animals which are being secured. The greatest increase in the dairy breeds has been made along the line of the Holsteins.

Horses—No material change from last year. The number of good individuals in the county does not seem to be increased.

Swine—The stock of swine in the county will be very much below the average, due to the ravages of hog cholera. Many of the farmers have vaccinated their herds this season with good results. The shortage for this year will not be as great as that of 1912. I anticipate that the effects of the cholera here will mean a shortage in the hog crop and will affect the number of animals that will be kept on the farm for the next three or four years.

Sheep—Very few sheep are kept but there seems to be a decline in the number as compared with last year. The spring crop was good.

Poultry—There is a shortage in the number of fowls raised this year. The number of birds which have been reared to maturity will fall below the average.

Bees—The honey crop was good, perhaps a little above the average.

Drainage—The amount of work which is being done along this line seems to be a little slack and there is no indication that there will be much of it done next spring.

Other Industries—The manufacturing industry of the county, which centers chiefly at Waterloo, has passed through a very busy and successful year.

Lands—There has been a gradual increase in the price of land during the past season in practically every part of the county. However, during the past six months there has not been very much of a change and at present there is not the usual transfer of lands that we ordinarily have.

Report of Fair—The Dairy Cattle Congress was held October 13-18, and despite the rainy weather was a great success. This is a dairy cattle show primarily and is recognized now as second only to the National Dairy Show.

BREMER.

J. Q. LAUER, WAVERLY, OCTOBER, 1913.

General Condition of Crops and Season—Crops good; season was ideal to start out on but the latter part was dry.

Corn—Above the average, although not as good as last year.

Oats—Generally fair but the straw is short and smutty.

Wheat—Very little raised.

Rye—Fair.

Barley—But little raised.

Flax—I know of none in the county.

Buckwheat—Good but not much raised.

Millet—Good.

Sorghum—Short.

Timothy—Good.

Clover—Fair.

Prairie Hay—Good.

Other Grains and Grasses—Several new growers of alfalfa.

Potatoes—Fair.

Vegetables—Good.

Apples—Good.

Other Fruits—Plums scarce.

Cattle—Fair; rather thin on account of short pasturage.

Horses—Good.

Swine—Fair; cholera in some localities.

Sheep—Good but not many raised.

Poultry—Good.

Bees—Good.

Drainage—Good.

Other Industries—Prosperous.

Lands—Good, advancing in price all the time.

Report of Fair—Held September 15 to 19. Most successful we have ever held.

BOONE.

W. C. TRELOAR, OGDEN, OCTOBER 23, 1913.

General Condition of Crops and Season—Fair.

Corn—Quality good and good average crop.

Oats—Good.

Wheat—Not much raised.

Rye—None.

Barley—None.

Flax—None.

Buckwheat—None.

Millet—None.

Sorghum—None.

Timothy—A good average crop.

Clover—Good average crop.

Prairie Hay—Not much raised.

Other Grains and Grasses—None.

Potatoes—Very poor crop.

Vegetables—Good average crop.

Apples—Not very good.

Other Fruits—Fair crop.

Cattle—Not many raised.

Horses—Good.

Swine—A great many hogs dying.

Sheep—Not many raised.

Poultry—Good.

Bees—Not many raised.

Drainage—Not as much tiling done as usual.

Other Industries—The coal mines are working every day; the quality of coal is very good.

Lands—Not much changing hands; selling price ranges from $125.00 to $250.00 per acre.

Report of Fair—Held at Ogden, September 16-19. Exhibits in some departments were not so good as in other years but the horse show was the best ever. We had our share of rain as we had but one good day out of four.

BOONE.

JOHN S. CROOKS, BOONE, OCTOBER 4, 1913.

General Condition of Crops and Season—Fair; season dry and warm.

Corn—Good average crop.

Oats—Fair crop; 35 to 50 bushels per acre. Extra good quality.

Wheat—Good crops; 25 to 40 bushels per acre.

Rye—None.

Barley—None.

Flax—None.

Buckwheat—Not any.

Sorghum—Fair.

Timothy—Good yield and good quality.

Clover—Good yield and quality.

Prairie Hay—Good yield.

Other Grains and Grasses—All good.

Potatoes—Almost a total failure.

Vegetables—Good crop of early potatoes; too dry for the late ones.

Apples—Large yield.

Other Fruits—Fair.

Cattle—Many good herds and all in good condition.

Horses—Large number of good horses.

Swine—A great many dying.

Sheep—A number of flocks being fed.

Poultry—A large number and prices are high.

Bees—Not many.

Drainage—A large amount of work being done. A number of large county jobs.

Lands—Some land changing hands; prices range from $150.00 to $250.00 per acre.

Report of Fair—Held September 1-4. Fair attendance; good exhibits.

BUCHANAN.

J. S. BASSETT, INDEPENDENCE, OCTOBER 28, 1913.

General Condition of Crops and Season—Owing to the extreme heat and drouth that characterized the season of 1913 crops of all kinds were below the average. Final returns, however, were better than anticipated.

Corn—The usual acreage; husking returns show yields from 25 to 50 bushels and in some instances as high as 75 bushels per acre is reported.

Oats—Yields as low as 12 bushels are reported. The highest yield report was 60 bushels. The quality was good and the acreage was increased over last year.

Wheat—Comparatively little grown in this county. On the small acreage sown, however, satisfactory results were obtained both from the spring and winter fields.

Rye—Winter rye is grown to a small extent, chiefly as a nurse crop for timothy. It is not considered a profitable market crop.

Barley—Acreage small; average yield 18 bushels.

Flax—None grown here.

Buckwheat—Owing to the cold, wet weather which prevailed during May considerable low land intended for corn was sown to buckwheat, which increased the acreage above the average.

Millet—Very little raised. A large number of silos have been built this year and silage is taking the place of other forage crops.

Sorghum—But little raised. What we had was good.

Timothy—The dry seasons of the past three years have made it difficult to get a good crop and the acreage this year is below the average.

Clover—The high price of seed has curtailed the sowing of clover for the past three or four years.

Prairie Hay—Not much left.

Other Grains and Grasses—Some farmers are experimenting with small patches of alfalfa. Some report encouraging results; others state that it deteriorates after one or two cuttings.

Potatoes—Increased acreage over last year but owing to drouth yield was light. Not nearly enough raised for home consumption.

Vegetables—Very few raised in a commercial way. Plenty for home consumption.

Apples—No commercial orchards in the county. Assessors report 372 acres in orchard. Generally used for home use and none shipped out.

Other Fruits—Short crop of berries on account of hot weather.

Cattle—Average number on feed. Many stockers and feeders shipped in. Renewed interest in dairying.

Horses—Considerable interest shown in the raising of draft horses. The breeding of light harness horses is on the decrease. There is an active demand at high prices for all high-class drafters.

Swine—Ten per cent decrease from last year, owing to the ravages of hog cholera.

Sheep—Assessors reported 5,354 sheep on farms in this county in 1912. There are no large flocks. Several hundred are shipped in every fall and fattened.

Poultry—One of our most important and profitable industries.

Bees—I know of only three parties who make a business of the production of honey.

Drainage—The farmers here are fully alive to the importance and necessity of tile drainage for profitable farming of our high priced lands.

Other Industries—All doing well.

Lands—Rapidly advancing in value; the increase this year being fully $20.00 per acre. Prices range from $100.00 to $200.00 per acre.

Report of Fair—Held September 2-5. Good weather and good attendance. Exhibits good in all departments except swine, which was due to hog cholera.

BUENA VISTA.

W. J. SIEVERS, ALTA, SEPTEMBER 18, 1913.

General Condition of Crops and Season—The general condition of crops in this county for the year 1913 has been good and just about normal. While it did not come up to the crops of 1912, yet from a financial point of view with prices higher than last year, it will average well. With a trifle more rain it would have been a banner year.

Corn—Corn will average in the neighborhood of 50 bushels to the acre and the stand was good and the yield would have been larger but for the fact that dry weather set in during the late summer.

Oats—The quality was exceptionally good and while the yield perhaps did not average over 35 bushels to the acre, yet by weight it will bring it up considerably higher.

Wheat—Very little raised; fair yield.

Rye—Small acreage and fair yield.

Barley—Small acreage and fair yield.

Flax—None to speak of.

Millet—A good yield.

Sorghum—Very little raised.

Timothy—A good stand and good quality.

Clover—A fair yield; the first crop is usually cut for hay and the second crop for seed.

Prairie Hay—But very little raised.

Other Grains and Grasses—A fair yield.

Potatoes—Buena Vista County has been noted for the large out-put of potatoes and hundreds of cars of potatoes have been shipped out annually but this year it is a question whether many will be shipped out as the crop is short.

Vegetables—Have done well and matured before the extreme hot weather.

Apples—One of the largest crops of apples that we have ever raised but as the variety raised are summer apples there are not many shipped out.

Other Fruits—Have done well.

Cattle—Owing to the dry weather and short pastures cattle have not done so well and the milk supply has been smaller.

Horses—A good price and steady demand.

Swine—Farmers claim this has been the worst year they have ever experienced in hog raising, owing to the cholera epidemic. There are very few farmers that have not had cholera in their herds; some have lost every hog on their farms. The demand for brood sows this winter will bring the prices up to a high point.

Sheep—Have done very well.

Poultry—High prices for eggs stimulate the raising of poultry.

Bees—There will be an abundance of honey.

Drainage—This has been an especially good year for draining, owing to the dry weather. From now on where drainage is needed they will be very busy.

Other Industries—Good.

Land—Selling high and going higher. The prices now average from $175 to $200 per acre and some pieces have been put on the market for $225 per acre.

Report of Fair—Held August 12-15. One of the best fairs ever held and from a financial viewpoint think it can be claimed as the best. The society had hard luck in the early spring by having their amphitheater destroyed by a small cyclone and this necessitated building a new grand stand at a cost of about $1,500.00.

BUTLER.

O. E. MISSMAN, ALLISON, OCTOBER 1, 1913.

General Condition of Crops and Season—With the exception of crops on sandy soils, of which there is not a great area in the county, they are about average.

Corn—Probably not as large a yield as last year, owing to conditions above stated.

Oats—Heavy grain and well matured. Straw generally short but quite free from rust.

Wheat—Reported a good big yield of fair quality.

Rye—Fair quality fully up to the average yield.

Barley—Not as large acreage as usual but a good crop.

Flax—Very little raised.

Buckwheat—Small acreage; average crop.

Millet—Heavy, probably not as much foliage as in former years.

Sorghum—A few pieces; very good quality.

Timothy—Not as heavy as in former years; acreage decreasing.

Clover—Nearly every farmer raises clover and some excellent pieces are seen. The foliage is fairly heavy and the yield of seed is average.

Prairie Hay—Not much in existence; slough hay was heavy.

Other Grains and Grasses—A number of fields of alfalfa and reports on this crop are quite encouraging.

Potatoes—Early ones very light; late ones about half a crop.

Vegetables—Good yields; late cabbage reported sound with fair yield.

Apples—Heavy yields with excellent quality, epecially where sprayed.

Other Fruits—Berry crop was large and of good quality and grapes reported good.

Cattle—About the usual number raised; shipments of finished stuff below the average; feeders and stockers in good demand.

Horses—Very thrifty; many horses in the county and not an unusual amount of sickness.

Swine—Many pure bred herds in the county. A great deal of cholera was prevalent this summer. Breeders reports favorably on immunizing.

Sheep—Not a large number raised but they do well.

Poultry—Doing well; some poor hatches reported in the spring. More turkeys being raised than usual.

Bees—No large apiaries; a great many farmers keep a few colonies.

Drainage—The county has good natural drainage but much tile is being placed.

Other Industries—Progressing

Lands—Values increasing; many sales this year at $100 to $200. Farm mortgages 5½ to 6%.

Report of Fair—Held September 10-12, 1913. More exhibits than last year but the rain cut the attendance badly the last day.

CALHOUN.

W. Q. STEWART, ROCKWELL CITY, OCTOBER 16, 1913.

General Condition of Crops and Season—Fairly good crops; fore part of season too rainy.

Corn—Good average; 40 to 50 bushels per acre.

Oats—Fair average; 30 to 40 bushels per acre.

Wheat—Not much grown but winter wheat averages 15 to 20 bushels per acre.

Rye—Not much raised.

Barley—Just fair.

Flax—Not much raised.

Buckwheat—Not much raised.

Millet—Fair crop.

Sorghum—Good.

Timothy—One and one-fourth tons per acre.

Clover—First crop 1½ tons; second crop yielded about one bushel of seed per acre.

Prairie Hay—Good.

Other Grains and Grasses—Fair.

Potatoes—No good; small and not enough to supply home use.

Vegetables—Good.

Apples—Large crop of fall apples.

Other Fruits—Medium.

Cattle—25% of the average number.

Horses—Average number.

Swine—25% of the average number.

Sheep—50% of the average number.

Poultry—County full of chickens; no disease reported.

Bees—Failure.

Drainage—About all tiled out.

Other Industries—Normal.

Lands—$15.00 higher than a year ago.

Report of Fair—Held at Rockwell City, July 29-August 1. All departments were fairly well filled. The weather was fine and we had the largest attendance we have ever had.

CALHOUN.

H. A. ARNOLD, MANSON, OCTOBER 4, 1913.

General Condition of Crops and Season—Good, rather hot and dry.

Corn—An average yield and good quality except a small per cent of the late planting.

Oats—Not an average yield but the quality was good

Wheat—Not much raised but the yield was good.

Rye—Very little sown.

Barley—Where sown on good soil the crop was good, both as to yield and quality.

Flax—None to speak of.

Buckwheat—Mostly grown for hay; yield good.

Timothy—New seeding yielded best. On the older sod the yield was two-thirds of an average crop.

Clover—Was good, either when grown alone or when mixed with timothy.

Prairie Hay—Only slough grass and very little of that.

Potatoes—Very poor.

Vegetables—Not as good as usual on account of dry weather during the growing season.

Apples—Not as good as usual; too dry during the growing season.

Other Fruits—None to speak of.

Cattle—The usual number on hand but many have been shipped in. Lots of breeding cows.

Horses—Generally healthy.

Swine—Thousands have died and others are losing them through disease.

Sheep—Only a few.

Poultry—The usual number raised.

Drainage—Still being pushed to a finish; mostly laterals as the large district ditches and tile are practically all in.

Lands—Few transfers taking place at from $150 to $200 per acre.

Report of Fair—Held the first week in September. The weather was ideal and the attendance unusually good. The exhibits were good in all departments, except swine, which was due to hog cholera.

CARROLL.

PETER STEPHANY, CARROLL, SEPTEMBER 27, 1913.

General Condition of Crops and Season—Crops very good; season just fair.

Corn—Good average crop.

Oats—Fairly good crop.

Wheat—Fine crop.

Rye—Not any.

Barley—Average crop.

Timothy—Good crop.

Clover—Fine crop.

Prairie Hay—Good crop.

Other Grains and Grasses—Fine grass year; very heavy.

Potatoes—Just a fair crop.

Vegetables—Fair crop; not as good as generally raised.

Apples—Lots of apples.

Other Fruits—Generally speaking they were satisfactory.

Cattle—Very good shape.

Horses—In good condition.

Swine—Considerable cholera; otherwise in fine condition.

Poultry—Plentiful.

Bees—Plentiful.

Drainage—Considerable county drainage being done.

Lands—Conditions very fine; prices going higher every day.

Report of Fair—Most successful fair in the history of the association.

CASS.

D. P. HOGAN, ATLANTIC, OCTOBER 17, 1913.

General Condition of Crops and Season—Very good.

Corn—About one-half crop; quality good.

Oats—Big crop; quality good.

Wheat—Big crop winter wheat; good quality.

Rye—None.

Barley—None.

Flax—None.

Buckwheat—Not any.

Millet—Not any.

Sorghum—Very little.

Timothy—Good fair crop of hay; quality good. The seed crop was good.

Clover—Good crop of hay; quality good. Not a great deal of seed.

Prairie Hay—Not much grown.

Potatoes—Late ones a total failure; early ones a light crop.

Vegetables—Early ones fair; late ones a light crop.

Apples—Very light crop; late apples almost total failure.

Other Fruits—Peaches a big crop; plums fair; strawberries good.

Cattle—Light supply on hand but they are in good condition.

Horses—The usual supply and in good condition.

Swine—A nice lot of pigs on hand but probably one-third of them died with cholera this summer and they are still dying.

Sheep—Fair supply and in good condition.

Poultry—Large crop.

Bees—Usual condition.

Drainage—Too dry to tile.

Lands—Not much selling; price held higher than last year.

Report of Fair—Exhibits light and attendance light. Interest seems to be lagging and we may not hold a fair another year.

CASS.

R. B. MARKER, ATLANTIC, OCTOBER 30, 1913.

Corn—Quality good; 60 per cent of an average yield.

Oats—Quality good; 70 per cent of a crop.

Wheat—Good; 70 per cent of a crop.

Rye—Not much raised.

Flax—None raised.

Buckwheat—Practically none grown here.

Millet—Practically none.

Sorghum—Very little.

Timothy—Very good crop; 80 per cent.

Clover—About 40 per cent.

Prairie Hay—Unknown.

Other Grains and Grasses—Some alfalfa being started.

Potatoes—Very poor.

Vegetables—One-half crop.

Apples—25 per cent of a crop.

Other Fruits—Small fruits very good; about 80 per cent.

Cattle—Feeding 25 per cent.

Horses—100 per cent. Good.

Swine—90 per cent. Considerable trouble with swine plague.

Sheep—45 per cent.

Poultry—Good; 90 or 100 per cent.

Bees—75 per cent.

Drainage—Well taken care of.

Other Industries—Conditions good.

Lands—On the increase.

Report of Fair—Held September 15-19, 1913.

CEDAR.

C. F. SIMMERMAKER, TIPTON, SEPTEMBER 15, 1913.

General Condition of Crops and Season—Condition of crops good; the season was favorable although very dry at times.

Corn—A good average crop. Will be cut short in some parts of the county by dry weather.

Oats—Generally a good crop; quality fine.

Wheat—Very little raised; what we have is good.

Rye—Fair crop; not much sown.

Barley—Good crop and quality fine.

Flax—None raised.

Buckwheat—None raised.

Millet—Light, owing to dry weather.

Sorghum—None raised to speak of.

Timothy—Fair crop; quality good.

Clover—Fair crop; good in certain localities.

Prairie Hay—Very little here.

Other Grains and Grasses—Fair to good.

Potatoes—Good average crop.

Vegetables—Not up to average, owing to dry season.

Apples—Good crop generally.

Other Fruits—Plenty of pears and peaches, small fruit light.

Cattle—Scarce and high.

Horses—Good horses selling at high prices; many good horses in the county.

Swine—Scarce owing to disease; a great deal of cholera.

Sheep—Fair amount; quality of stock good.

Poultry—More than former years; quality good.

Bees—Fair.

Drainage—County most all drained out. A sanitary sewer is just being completed at Tipton at a cost of $80,000.00.

Other Industries—Prosperous.

Lands—Not much selling this season. Prices very high, around the $200.00 mark for good farms. Not many farms for sale.

Report of Fair—The 1913 fair was held at Tipton September 2-5, and was the best fair ever held in the county. The stock show was great, with 110 horses on exhibition. The attractions were excellent.

CERRO GORDO.

ARTHUR PICKFORD, MASON CITY, OCTOBER 24, 1913.

General Condition of Crops and Season—Good crops; moisture was abundant and there was an entire lack of disastrous storms and injury by insect foes.

Corn—While the weather was cold and wet at planting time the month of June and July was hot and rain was plentiful. The crop ripened naturally and is much better than the average.

Oats—Were not damaged by the hot weather and were secured without injury from storms or rust.

Rye—Came through the winter in good shape and an average crop was harvested. Only a small acreage is grown here.

Barley—The dry hot weather made the straw short but the grain was of good color and a fairly good crop was harvested.

Flax—Very little grown and this made only a fair crop.

Timothy—Comparatively little timothy is grown since the price of seed has fallen off. The crop was fairly good.

Clover—Came through the winter in good shape and a good crop of hay was cut; many cutting the second crop for seed.

Prairie Hay—Very little wild hay left and what there is here gives a very light yield.

Potatoes—Very uneven crop; on sandy soil the yield is poor. On heavier soils, with abundant moisture, a good crop was grown.

Vegetables—Generally good.

Apples—Very good crop; the ground was covered with windfalls and still there was enough left on the trees to make a good yield.

Other Fruits—Small fruits and grapes were abundant.

Cattle—Scarce and high in price.

Horses—About the usual number of colts were foaled this year and no disease among them.

Swine—Probably one-half of the pig crop was lost by cholera or swine disease. Older hogs did not suffer so seriously.

Sheep—Generally healthy but not grown in sufficient numbers.

Poultry—A good year for young chickens and no disease.

Bees—Plenty of bloom furnished them with honey material and so far as known there is no disease.

Drainage—Tiling is a continuous performance and more land is being brought under cultivation.

Other Industries—Beet raising is a growing industry.

Lands—Are advancing in value. Sales are being made, ranging in price from $100.00 to $200.00 per acre, according to location and improvements. Fairly improved farms sell at from $125.00 to $150.00 per acre.

Report of Fair—Held September 8-12 inclusive. This was the seventh annual fair of the society and speaking generally it was the best, although there was a shortage of cattle and swine exhibited as compared with some previous years; other exhibits were good and the attendance was satisfactory.

CHICKASAW.

C. L. PUTNEY, NASHUA, OCTOBER 28, 1913.

General Condition of Crops and Season—A little less than the average crop.

Corn—Average crop; about 45 bushels per acre and of good quality.

Oats—Below the average; 32 to 35 bushels per acre; just fair quality.

Wheat—Very little raised, but good.

Rye—Good but only a small acreage.

Barley—Very little raised.

Flax—None.

Buckwheat—Very little raised; fair quality.

Millet—Good crop; small acreage.

Sorghum—But little raised.

Timothy—Less than an average crop.

Clover—Fair crop.

Prairie Hay—Very little.

Potatoes—Small yield.

Vegetables—Good.

Apples—Good yield of early apples.

Cattle—More cattle than last year and better grade.

Horses—Breeds improving; horses are getting better each year.

Swine—A good deal of sickness and pretty well sold up.

Sheep—Less than last year.

Poultry—More poultry than ever before.

Bees—Very few.

Drainage—Dry year and not much drainage being done.

Lands—Increasing in value, selling around $125.00 to $150.00 per acre.

Report of Fair—Held at Nashua September 2-5. The weather, attendance and attractions were very good; in fact the outcome of the fair was very satisfactory to the association.

CHICKASAW.

F. D. GRIFFIN, NEW HAMPTON, OCTOBER 11, 1913.

General Condition of Crops and Season—Both good.

Corn—Good.

Oats—Fair.

Wheat—Not much raised.

Rye—Fair crop.

Barley—Good.

Flax—Good; but a small acreage.

Buckwheat—Fair crop; not much raised.

Millet—Fair crop but not much grown.

Sorghum—None to speak of.

Timothy—Good.

Clover—Fair.

Prairie Hay—Good crop.

Other Grains and Grasses—Good.

Potatoes—Poor crop.

Vegetables—Good crop.

Apples—Good crop.

Other Fruits—Good.

Cattle—Several very good herds of Holsteins, Polled Durhams, and Polled Angus in the county.

Horses—A better grade of horses raised. They are of the Clydesdale, Percheron and Belgian breeds mostly.

Swine—Good grade of hogs raised. Hog cholera has reduced the herds in the county by more than one-half.

Sheep—More sheep being raised each year.

Poultry—More raised each year.

Bees—Not many bees kept.

Drainage—Natural drainage is good; farmers are tiling low grounds.

Lands—Value is increasing; average per acre $105.00.

Report of Fair—Held September 9-13 at New Hampton. Weather good except September 11-12, when it rained. The attendance was good.

CLAYTON.

R. W. SCHUG, STRAWBERRY POINT, OCTOBER 30, 1913.

General Condition of Crops and Season—Crops slightly below the average; season hot and dry.

Corn—About 90 per cent of an average crop; about 40 bushels to the acre.

Oats—85 per cent; about 30 bushels to the acre.

Wheat—But little grown here; about 20 bushels to the acre.

Rye—Not much grown.

Barley—Very little grown; about 25 bushels per acre.

Flax—None.

Buckwheat—About 20 bushels per acre.

Millet—None.

Timothy—Not a heavy crop; about 8 bushels of seed.

Clover—Very little threshed.

Prairie Hay—None.

Potatoes—50 per cent.

Vegetables—The usual crop; used entirely for home consumption.

Apples—Good crop.

Cattle—No change from last year.

Swine—Good average crop and in thrifty condition.

Sheep—Only a few raised but they are in a healthy condition.

Poultry—110 per cent and doing very well.

Bees—I don't know anything about bees.

Drainage—None.

Lands—Advanced in price over last year.

CLAYTON.

MAX E. BISHOP, ELKADER, OCTOBER 17, 1913.

General Condition of Crops and Season—Good.

Corn—Average crop; yielding about 60 bushels to the acre.

Oats—Extra good crop; going about 50 bushels to the acre.

Wheat—Fair; not much raised in this county.

Rye—Fair.

Barley—Not as good as the last few years.

Flax—None raised.

Buckwheat—Not much raised, good.

Millet—None.

Sorghum—Good.

Timothy—Extra good crop.

Clover—Extra good crop; not much raised.

Prairie Hay—None.

Other Grains and Grasses—Fair.

Potatoes—About one-half crop.

Vegetables—Good.

Apples—Extra heavy crop.

Other Fruits—Good.

Cattle—All in good condition as usual and about as many raised.

Horses—About the same as in the past five years.

Swine—Good; about the same number being raised as in the past few years.

Sheep—Sheep raising declining steadily.

Poultry—About the same as usual.

Bees—No honey this year; about one-third as many bees as usual.

Lands—Steady.

Report of Fair—Held at Elkader on September 3-5 inclusive. The weather was too hot for much of an exhibit of stock, but we consider the fair this year the best in the history of the association.

CLAYTON.

HENRY LEUHSEN, GARNAVILLO, OCTOBER 11, 1913.

General Condition of Crops and Season—Slightly below the average yield, but there should be no reason for complaint.

Corn—A fair yield; will average about 75 per cent of a crop.

Oats—Quality good but light yield.

Wheat—Not much raised in this section.

Rye—A good average yield.

Barley—Light yield; quality not the best.

Flax—None raised.

Buckwheat—None to speak of.

Millet—None raised.

Sorghum—A fair crop.

Timothy—A good crop; considerable of it cut for seed.

Clover—Not a very good crop; a great deal of it winter killed.

Prairie Hay—A good all around crop.

Other Grains and Grasses—A fair crop.

Potatoes—A light yield, particularly the early ones; the late ones promise at least two-thirds of a crop.

Vegetables—A good crop.

Apples—A large yield in this section.

Other Fruits—A good average crop.

Cattle—Our farmers are raising some fine stock.

Horses—Farmers are realizing a good price for their surplus stock.

Swine—Still the principal industry in this county. They are raised in large numbers.

Sheep—On account of the low price of wool the flocks are not as large as in former years.

Poultry—An industry that is receiving more attention yearly. Both poultry and eggs are bringing a good price the year round.

Bees—A good many of our farmers report losses of their swarms during the last winter.

Drainage—Natural.

Other Industries—Our farmers still own and operate their creamery with great success, turning out some very choice butter.

Lands—Going up in price, with but very little for sale in this community.

Report of Fair—Held at National, Iowa, September 9-12. Our exhibits were very good in all departments except cattle. The attendance would have been large had the weather not interfered on the big day. Rain spoiled the financial end of the fair but nevertheless the association will pay their premiums in full and continue the old Clayton County Fair.

CLINTON.

G. H. CHRISTENSEN, DE WITT, OCTOBER 16, 1913.

General Condition of Crops and Season—Very fair.

Corn—About 75 per cent.

Oats—25 to 40 bushels per acre.

Wheat—12 to 25 bushels per acre.

Rye—None in this locality.

Barley—80 per cent of last year's crop.

Flax—None.

Sorghum—Fair.

Timothy—Very little seeded.

Clover—Large acreage and good crop.

Prairie Hay—None.

Other Grains and Grasses—Good.

Potatoes—Late ones are fair crop but green.

Vegetables—Good.

Apples—Good.

Other Fruits—Peaches very good.

Cattle—Usual supply.

Horses—Good.

Swine—25 per cent short on account of cholera.

Sheep—Very few raised.

Poultry—More than usual.

Bees—Good.

Lands—$150 to $225 per acre.

Report of Fair—September 10-12. Largest attendance in the history of the fair. Big showing of cattle and horses but short on hogs. Generally conceded to have been the best fair we have ever had.

CRAWFORD.

O. M. CRISWELL, ARION, OCTOBER 6, 1913.

Corn—Fair.

Oats—Good.

Wheat—Fall wheat very good; spring wheat just fair.

Rye—None raised.

Barley—Fair.

Flax—None raised.

Buckwheat—None.

Millet—None.

Sorghum—Very little.

Timothy—Very good.

Clover—Fine.

Prairie Hay—Good.

Potatoes—Very poor.

Vegetables—Fairly good.

Apples—Poor.

Other Fruits—Poor.

Cattle—Very few.

Horses—Good.

Swine—Very few left.

Sheep—Very few.

Poultry—Good.

Bees—Scarce.

Lands—Are still on the increase.

Report of Fair—Held September 9-12. Had a very good show of stock, grains and vegetables and the attendance was also good considering the weather.

DAVIS.

J. O. WISHARD, BLOOMFIELD, OCTOBER 10, 1913.

General Condition of Crops and Season—Only fair.

Corn—About 2-3 of a full crop.

Oats—Good crop; quality fine.

Wheat—Small crop; yield and quality good.

Rye—Not much sown.

Barley—None raised to speak of.

Flax—None raised.

Buckwheat—Owing to dry reason there was not much sown.

Millet—Crop short; quality good.

Sorghum—Good; about the normal acreage.

Timothy—Light crop, owing to drouth.

Clover—Good; acreage about as usual.

Prairie Hay—None raised.

Other Grains and Grasses—Only a fair crop owing to the continued dry weather.

Potatoes—Average crop; quality excellent.

Vegetables—Only a fair crop.

Apples—Yield large; quality not very good.

Other Fruits—Pears, peaches, cherries and plums good.

Cattle—Scarce; farmers have been selling or shipping nearly all of their calves. The quality is good.

Horses—Plenty of horses; quality good; mostly draft breeds.

Swine—Average number in the county.

Sheep—More than ever and doing well this season. Davis county cannot be beat for the sheep industry.

Poultry—This industry seems to be more progressive than usual.

Bees—Scarce.

Drainage—Lots of talk but not much being done.

Other Industries—This is purely a farming and stock raising community.

Lands—Selling from $65 to $200 per acre and advancing all the time. Farmers are taking quite an interest in fertilizing the lands by raising clover and pasturing sheep and other stock.

Report of Fair—Held September 9-12. The attendance was good but owing to rain on our big day our receipts were cut down but we had a fine display of exhibits in all departments.

DELAWARE.

J. G. SABIN, MANCHESTER, OCTOBER 17, 1913.

General Condition of Crops and Season—The season has been very dry and crop conditions are a little above the average.

Corn—75%.
Oats—60%.
Rye—75%.
Barley—80%.
Timothy—65%.
Clover—75%.
Prairie Hay—85%.
Other Grains and Grasses—65%.
Potatoes—40%.
Vegetables—70%.
Apples—90%.
Other Fruits—90%.
Cattle—95%.
Horses—95%.
Swine—Dying from cholera; about 50% left.
Sheep—90%.
Poultry—95%.
Bees—Very few.
Drainage—Increase of about 25%.
Lands—No apparent increase from 1912.

Report of Fair—Held September 9-12. A very poor attendance on account of rain.

DICKINSON.

A. M. JOHNSON, JR., SPIRIT LAKE, OCTOBER 6, 1913.

General Condition of Crops and Season—All crops average or better; season favorable.

Corn—Increase in acreage; yield and quality good; 40 bushels per acre.

Oats—Average yield; quality good; 50 bushels per acre.

Wheat—20 bushels per acre; quality fair.

Rye—Very little raised.

Barley—Yield slightly under average; quality good.

Flax—Good; reduced acreage.

Buckwheat—No report.

Millet—Small acreage; good yield.

Sorghum—I know of none.

Timothy—Average crop.

Clover—Very good yield; acreage above normal and crop unusually large.

Prairie Hay—Average crop.

Potatoes—Generally good yield—acreage below normal.

Vegetables—Very good.

Apples—Heavy yield and extra fine quality.

Other Fruits—Very good.

Cattle—Supply light; condition good and quality continually improving.

Horses—Very good condition and about the usual number.

Swine—The usual number; less about 30% on account of cholera.

Sheep—The usual number and in good condition.

Poultry—Good crop and in first class condition.

Bees—Reported fair.

Drainage—On account of the favorable season and no excess moisture not so much tiling as usual being done.

Other Industries—Every line of business has had an exceptionally good year.

Lands—About the usual amount of land changing hands at good advance over last year's prices. Much improving being done by most farmers.

Report of Fair—Held September 8-10. Best fair ever held in the county, notwithstanding the rain on the second day.

FAYETTE.

E. A. MCILREE, WEST UNION, OCTOBER 1, 1913.

General Condition of Crops and Season—The crops have been above the average; no violent wind or hail storms and no floods or insect pests, which usually cut short to a certain extent, the farmers' crops.

Corn—An average crop; fully 90%. Excessive heat did a little damage but not much.

Oats—Made a great growth of straw and a large yield of grain per acre, with no rust or smut. The excessive heat in July shaded off the weight of the grain a trifle.

Wheat—Not grown in this county to any considerable extent. A few pieces of winter wheat gave extraordinary yields; some pieces above

40 bushels per acre. Spring wheat was of good quality but not much grown.

Rye—Not a very large crop in the county. The yield this year was large, and of good quality. It is sown mostly as a nurse crop for seeding to grass or clover.

Barley—Gave very good returns in grain. Straw, however, was not as long as in some other years. It is also used largely for seeding to grass or clover.

Flax—Not grown in this county to any reportable extent.

Buckwheat—Not sown extensively excepting where native slough sod is being broken up. The yield promises to be good and of good quality.

Millet—Very little grown, only for chicken feed.

Sorghum—Very little grown. The season has been good for this crop.

Timothy—A shade light on account of the dry winter and the dry weather in May and June. The quality of the hay and seed, however, was extra good.

Clover—Has been greatly reduced in the past three years on account of the difficulty in getting a stand. Winter conditions have also been bad. The very high price of seed also cut down acreage materially.

Prairie Hay—Only cut in a very small way. Some townships not having any and others only a few small pieces.

Other Grains and Grasses—Alfalfa is being experimented with in a small way and it appears to be very promising.

Potatoes—Have been very disappointing in yield, although of fairly good quality, being free from rot and scab. There will not be more than 40 per cent of last year's crop.

Vegetables—Have not been so good as some other years on account of the heat during the growing season. The quality is not as good as usual either.

Apples—The most abundant crop known in the history of the county. Probably 100 car loads have gone to waste on the ground.

Other Fruits—Grapes have been a short crop; plums nearly a total failure; currants and gooseberries with blackberries and raspberries were very satisfactory.

Cattle—Not so many as usual on account of marketing veal calves and the high price for market stuff. There has been no disease and plenty of feed.

Horses—Increasing in number again from the low condition of a few years ago. There has been no epidemic and the grade of horses is being considerably improved. There is a large number of colts.

Swine—Have been unusually healthy in the county during the past year. They have been marketed very closely and the spring crop of pigs was rather short; high prices have also helped to reduce their number.

Sheep—There are a good many flocks in the county; mostly of the mutton type. There are no very large flocks.

Poultry—Disease has taken a good many of our fowls but still the number fitted for market has been large.

Bees—Bees in this county were nearly wiped out three years ago but they are again holding their own and the yield of honey this year was good.

Drainage—More tile being laid than in any previous year.

Other Industries—Progressing.

Lands—Increasing in value. Good farms selling for $100.00 or more per acre. Some pieces are selling as high as $150.00.

Report of Fair—Held August 25-29, which was a week earlier than we have held our fair for a number of years. This change, however, proved satisfactory and our fair was a success in every way.

FLOYD.

E. R. W. BENNETT, CHARLES CITY, DECEMBER 9, 1913.

Corn—Condition good; 110%.

Oats—Quality good; 95%.

Wheat—90%.

Rye—100%.

Barley—110%.

Flax—85%.

Buckwheat—Small amount grown.

Millet—Yield good.

Sorghum—Very little.

Timothy—Condition good; 110%.

Clover—Good condition; 100%.

Prairie Hay—Not much in the county.

Potatoes—Rather light crop; 75%.

Vegetables—Good.

Apples—Fair.

Other Fruits—Good.

Cattle—Healthy condition and more than in previous years.

Horses—Good condition and more than in previous years.

Swine—A number of losses reported from cholera.

Sheep—Condition good and more than the average number.

Drainage—None.

Lands—Increasing in value.

Report of Fair—None held.

FRANKLIN.

C. D. WILLIAMS, HAMPTON, SEPTEMBER 24, 1913.

General Condition of Crops and Season—Too dry for small grains.

Corn—90%; good.

Oats—Good; 80%.

Wheat—Very little raised.

Rye—Very little raised.

Barley—Fair.

Flax—None.

Buckwheat—None.

Sorghum—Some raised in the county and it yielded well.

Timothy—Good.

Clover—Good.

Prairie Hay—None.

Potatoes—Very light yield of both early and late potatoes.

Vegetables—Good.

Apples—100%.

Other Fruits—Very light crop.

Cattle—A good many cattle are fed but there are not as many on hand as usual.

Horses—Good class of horses.

Swine—Big crop and good but lots of cholera.

Sheep—Not many in this county.

Poultry—Good.

Drainage—County well drained by county ditches.

Lands—The best in Iowa.

Report of Fair—Held September 2-5; very hot weather and only one good day.

GREENE.

S. C. CULBERTSON, JEFFERSON, OCTOBER 29, 1913.

General Condition of Crops and Season—Early part of season unusually favorable. Lack of rains the latter part of July and the first half of August resulted in an appreciable loss in all crops.

Corn—Very small crop on sandy soil and on the heavy black soil our crops will be slightly under the average. As near as can be estimated about an average of 25 bushels to the acre; good quality.

Oats—The yield of oats will also be somewhat less than an average season; will average around 25 bushels per acre; quality is excellent.

Wheat—Comparatively little wheat raised in this county. However, winter wheat averages about 25 bushels per acre.

Rye—But little rye raised here.

Barley—None to speak of.

Flax—But little raised.

Buckwheat—I know of none.

Sorghum—Very little raised.

Timothy—Only a fair crop.

Clover—Early clover very light; later growth very good.

Prairie Hay—None to speak of.

Other Grains and Grasses—We have fields of alfalfa producing from three to four tons per acre. The growing of alfalfa in this county is considered by those who have tried it a good crop to raise.

Potatoes—Almost a total failure. Farmers are buying potatoes for home consumption from local merchants.

Vegetables—Generally a very light crop.

Apples—Almost a failure.

Other Fruits—All small fruits a very light crop.

Cattle—Shortage owing to high prices and lack of pasture.

Horses—Quality improving. We produce plenty of horses for local needs and many for the foreign markets. Prices are much less than a year ago for common farm horses.

Swine—Shortage, owing to hog cholera and the high price of grain.

Sheep—Not until recently have the stock raisers of this county given much attention to sheep. It is estimated that there are at present about 50,000 lambs on feed in Greene county. This is about ten times more than the number fed last year.

Poultry—This has been a good season for poultry.

Bees—Not many.

Drainage—During the present year there has been in excess of $100,000 of county tile drains contracted for. Including this and the laterals in connection therewith and the private drains which have been put in the aggregate will exceed $200,000.

Other Industries—All lines of business as a rule have had a very good year. However, in the aggregate as compared with 1912 there is some shortage of sales.

Lands—The price of land in this county has increased since July around $25.00 per acre. Many of the good to better equipped farms have recently sold at from $180 to $200 per acre. Small tracts of 20 to 40 acres with but fair improvements have sold as high as $300.00 per acre. We predict that the prices will eventually go higher.

Report of Fair—Held September 9-12. Rain on Wednesday caused a decrease in our attendance. However, the total attendance was greater than in 1912. The exhibits and attractions were good.

GRUNDY.

E. V. MCBROOM, GRUNDY CENTER, OCTOBER 23, 1913.

General Condition of Crops and Season—About average crops; season hot and dry to start with but plenty of moisture during the latter part.

Corn—Somewhat above the average; well matured and of good quality. Yielding from 40 to 60 bushels to the acre.

Oats—A little below the average; good quality and yielding from 30 to 50 bushels per acre.

Wheat—Not much raised.

Rye—Very little raised.

Barley—Yield below average and quality not up to standard.

Flax—Practically none.

Buckwheat—None raised.

Millet—Acreage small; yield good.

Sorghum—Not grown extensively.

Timothy—Above the average in yield; when cut for hay about one or one and one-half tons per acre. Below the average when cut for seed.

Clover—Very heavy; 1½ to 2½ tons per acre. Some seed.

Prairie Hay—None in the county.

Other Grains and Grasses—A few small fields of alfalfa.

Potatoes—Acreage smallest in ten years; yield about 60 bushels per acre. Forty cars shipped from this station against 203 last year.

Vegetables—Good; early varieties the best in years.

Apples—Yield above the average but they are scabby and wormy.

Other Fruits—Grapes and strawberries were good; plums and cherries a good average.

Cattle—In good condition and a good many will be put on feed. Cattle have been shipped in from Kansas and Nebraska.

Horses—Plentiful; the grade is gradually being improved.

Swine—A nice lot of pigs last spring but cholera over the county has caused a loss of practically 30%.

Sheep—Average number; not many on feed; wool crop good.

Poultry—A good average; more varieties and better quality than ever before.

Bees—Not generally kept.

Drainage—No county drainage; some tiling being done.

Lands—A great deal changing hands at about $20.00 per acre advance over last year. Now selling at from $175 to $250 per acre; the general average of fairly improved farms selling from $200 to $225.

Report of Fair—Held August 19-21. With the exception of hogs our exhibits were unusually good and the weather and attendance were very good. Our speed program was exceptionally good.

GUTHRIE.

WM. EDWARDS, GUTHRIE CENTER, OCTOBER 16, 1913.

General Condition of Crops and Season—The extended drouth through July was very damaging to the corn crop.

Corn—Would estimate the crop at about 65 and not to exceed 70% of a normal crop.

Oats—Straw short but well filled and heavy. The yield averaging from 40 to 50 bushels per acre.

Wheat—A good average crop, yielding 25 to 40 bushels to the acre.

Rye—Not enough raised to make an estimate.

Barley—Very little sown.

Flax—None raised in this locality.

Buckwheat—None sown in this vicinity.

Millet—A good crop and well filled with seed.

Sorghum—Small acreage; yield good.

Timothy—A good crop, the greater portion of the crop cut for seed.

Clover—Small acreage; yielding about one-half ton per acre. Some cut for seed.

Prairie Hay—Very little cut for hay; the best yielding fairly well.

Potatoes—Nearly a failure.

Vegetables—A meager crop.

Apples—Damaged in this locality by hail and wind; less than half a crop of winter varieties.

Other Fruits—Fair crop of strawberries; also raspberries and blackberries.

Cattle—A good many have been shipped in from western markets.

Horses—Holding their own in quality. Best draft teams bring as high as $500.

Swine—About 50% of the usual number and cholera is taking many of them. The disease has been arrested some by vaccination.

Sheep—This industry is growing and has been a money maker. Some are discouraged on account of the removal of the tariff.

Poultry—A very profitable industry for those that give it proper attention and care.

Bees—Too dry; not up to average.

Drainage—Marked attention is being given to tiling out low and swampy lands and they are becoming very productive.

Lands—Average price is from $120 to $130 per acre.

Report of Fair—Held September 30-October 3. The weather was ideal and the attendance good. The show of stock was not large but good.

HANCOCK.

W. L. BLISS, BRITT, NOVEMBER 18, 1913.

General Condition of Crops and Season—Crops vary over the county; yields fair to good.

Corn—Acreage large; quality generally good except in extreme west part of the county where crops were put in late; average yield 35 to 45 bushels.

Oats—Oats good in quality with an average yield of 40 bushels.

Wheat—Very little fall wheat sown; spring wheat fair. Average about 20 bushels.

Rye—Very little.

Barley—Barley fair quality; 30 bushels average yield.

Flax—But little sown; average yield 15 bushels per acre and quality good.

Buckwheat—Very little sown.

Millet—Very little.

Sorghum—Good yield but not much sown.

Timothy—Light crop; good quality.

Clover—Very good; well seeded.

Prairie Hay—Light crop.

Potatoes—Quality good; average yield 150 bushels per acre.

Vegetables—Generally very good.

Apples—Good crop early varieties.

Other Fruits—Large crop of all kinds of berries; fair crop plums.

Cattle—Getting scarce; farmers are buying stockers and feeders.

Horses—Horses in demand at high prices.

Swine—Hogs were plentiful earlier in the season but scarce at this date as cholera took a good many of them.

Sheep—Not many in the county although near Corwith there are a number who make a practice of raising sheep for market.

Poultry—Plentiful.

Bees—Not many.

Drainage—The greatest year for drainage we have ever had. Every farmer is draining or contemplating doing so.

Other Industries—Progressing.

Lands—Advancing in price, now ranging from $100.00 to $150.00 per acre. More intensified farming is being done every year.

HARDIN.

GEO. W. HAYNES, ELDORA, OCTOBER 27, 1913.

General Condition of Crops and Season—Generally good.

Corn—Very good; many yields going as high as 60 to 65 bushels per acre. Think a safe average would be about 50 bushels per acre.

Oats—Quality generally good; yield running from 25 to 60 bushels per acre.

Wheat—Very good; some yields of spring wheat running 30 bushels per acre.

Rye—Not much raised.

Barley—Quality good and an average yield.

Flax—Not much raised.

Timothy—Average yield; quality good.

Clover—More clover grown this year than for the past five years by 25 per cent.

Prairie Hay—Small amount left; quality and yield good.

Potatoes—Very small crop; quality fair.

Apples—Good crop.

Other Fruits—Fair.

Cattle—About the average increase; many western cattle shipped in.

Horses—About as usual.

Swine—Increase rather light on account of disease.

Sheep—About normal.

Poultry—Normal.

Drainage—This work is being carried on as fast as possible.

Other Industries—Growing.

Lands—Generally on the rapid increase.

Report of Fair—Held September 2-5, 1913. Weather and crowds good. We had a very successful fair.

HARRISON.

A. B. HASBROOK, MISSOURI VALLEY, 1913.

General Condition of Crops and Season—The season was dry and a very high temperature prevailed from the 20th of May to September 10th. It was favorable to cultivation and harvesting of crops and despite the excessive heat and much rainfall the farmers have little to complain of at this time.

Corn—In general the corn crop is good and of excellent quality.

Oats—Fair yield and of good quality. Not much raised in the county.

Wheat—The greatest crop ever produced in the county, both as to acreage and yield. Some yields reported as high as 40 bushels per acre.

Rye—Not much raised. The yield was fair and quality good.

Barley—Not much raised.

Flax—Hardly any grown.

Millet—A light crop.

Sorghum—Raised for forage; a good crop.

Timothy—A light crop; injured by hot, dry weather.

Clover—A fair crop.

Prairie Hay—A fair crop; the dry weather enabled farmers to harvest and secure all crops.

Other Grains and Grasses—Alfalfa is a great success this year and the several cuttings were secured with but little loss.

Potatoes—A very light crop.

Vegetables—All were injured by excessive heat and lack of moisture.

Apples—As a rule apples are small and not up to the usual quality. The yield will be fair.

Drainage—Great interest in drainage. Many miles of tile ditches have been laid this season.

Report of Fair—Held at Missouri Valley on September 9-12. The exhibition was a decided improvement over recent fairs and the fair management is very much encouraged.

HENRY.

JNO. A. BAXTER, WINFIELD, IOWA, OCTOBER 17, 1913.

General Condition of Crops and Season—Early part of season good but later it became too dry.

Corn—Will average about half a crop and not an average in quality. Most farmers report from 25 to 40 bushels per acre.

Oats—Good quality; averaging from 25 to 35 bushels per acre.

Wheat—Not much raised. Yield averaged from 20 to 35 bushels per acre.

Rye—About 20 bushels per acre.

Barley—None to speak of.

Flax—None raised.

Buckwheat—None.

Millet—None.

Sorghum—Very little and it was not good on account of drouth.

Timothy—Good crop.

Prairie Hay—None.

Potatoes—About one-fourth of a crop; too dry.

Vegetables—Early ones were good; late ones did not amount to anything.

Apples—About half a crop and very poor quality.

Other Fruits—Peaches, pears and plums were a fair crop.

Cattle—Very few cattle on feed owing to the high price of corn.

Horses—About an average number of colts.

Swine—Not as many hogs on hand as usual on account of high price of feed and loss by cholera.

Sheep—About an average.

Poultry—About the average of former years.

Bees—Very few kept.

Drainage—Most all the land in this section is tiled. However, tile is still being laid.

Lands—Very little land changing hands at the prices asked. Prices range from $175.00 to $225.00 per acre, according to improvements.

Report of Fair—Held August 5-8. We had good weather and had a very successful fair.

HENRY.

C. H. TRIBBY, MT. PLEASANT, IOWA, OCTOBER, 1913.

Corn—The average yield is about a half crop. The summer was extremely hot and dry; the early planting suffered from the heat, was badly fired, and yielded but little corn while the late planting made a fair crop; some farmers claiming as high as 65 bushels to the acre.

Oats—A little better than the usual crop. Some light in weight but there was a fine crop of straw and as the harvest season was dry the crop was harvested with little waste and no damage to either the grain or straw.

Wheat—The farmers are paying a little more attention to the wheat crop but of late years the acreage has been comparatively small. The yield was good this year and wheat is considered a paying crop.

Rye—There is but a small acreage of rye but the yield was good this season; a great deal better than last year.

Barley—Very little grown.

Flax—None.

Buckwheat—Too dry for buckwheat.

Millet—Very little sown but this was good.

Sorghum—A small crop here. The season was too dry for a good crop.

Timothy—An excellent crop; the acreage was not as large as usual but the yield was very heavy and the quality first class.

Clover—Clover was on top this season; the heaviest and most profitable crop we have had for years. The acreage was large and the harvest fine.

Prairie Hay—None.

Other Grains and Grasses—Blue grass is the principal pasture grass.

Potatoes—Light crop on account of drouth. Not enough to supply the local demand.

Vegetables—Generally of very good quality but below the average in size. Plenty for home consumption.

Apples—Plentiful, although smaller than usual and fell from the trees badly. The demand is very good for shipping purposes and there is a ready market for them.

Other Fruits—There was a good crop of cherries and lots of grapes. The strawberry crop was badly damaged by the hail, as was some of the other fruits.

Cattle—Not a great many in the county. Quite a number brought in this fall for feeding purposes.

Horses—Good supply of horses and the best class of horses in the state.

Swine—A great many raised. A very profitable industry.

Sheep—Not many raised, although there are a few very good flocks.

Poultry—A profitable industry in this county.

Bees—Very little interest in bees, although they seem to be profitable.

Drainage—Good. Considerable tiling is being done, which greatly improves the flat farms.

Lands—The lands of Henry county are of the best in the state. Our best farms sell as high as $325.00 per acre, while the rolling blue grass pasture land sells from $65.00 to $150.00 per acre.

Report of Fair—Held August 12-15. The most successful fair in the history of the association. We had an attendance of fully 20,000.

HUMBOLDT.

O. H. DEGROOTE, HUMBOLDT, IOWA, SEPTEMBER 16, 1913.

General Condition of Crops and Season—Good average crops in spite of the drouth during June and July.

Corn—The biggest crop we have had for years and two-thirds of the crop is now out of the way of frost. Estimated yields will be from thirty-five to seventy-five bushels per acre, except on light soil, where the crop is poor.

Oats—While the yield did not compare with that of 1912 it is an average one, ranging from thirty to sixty bushels per acre. The quality is very good.

Wheat—Not a great wheat county. Some spring wheat raised for milling, yielding from fifteen to twenty-five bushels per acre.

Rye—Very little grown.

Barley—A fair crop.

Flax—Very little flax grown.

Buckwheat—Very little raised.

Millet—A good crop this year.

Sorghum—Very little of this product made here.

Timothy—Fair to good.

Clover—Good crop; first class second growth.

Prairie Hay—Very good; wet spring insured this crop.

Other Grains and Grasses—Alfalfa acreage increasing. Many farmers report this a successful crop.

Potatoes—Scarcely a half crop; too dry.

Vegetables—Late rains of summer helped the vegetables; crop only fair.

Apples—A big crop; mostly summer varieties and no market.

Other Fruits—Poor plum crop but a big grape crop. Fair berry crop.

Cattle—Many feeders bought. A shortage of beef cattle at present.

Horses—About normal.

Swine—Cholera has played havoc with the hogs in this county. From one-third to one-half of the herds have been affected.

Sheep—Not a big sheep county; some good herds, however.

Poultry—A favorable year for poultry raising. Everything thriving.

Bees—One of the best bee counties in the state.

Drainage—The drainage of low lands continues. At present there is only small tracts to be drained in the southern part of the county, with considerable in the northern part needing drainage.

Other Industries—Thriving.

Lands—Values have increased enormously in the past five years. Prices range from $100 to $125 per acre. Some farms pay 6 per cent interest this year on $150 land.

Report of Fair—Held September 9-12. We opened up with threatening weather but in the end everything was satisfactory.

IDA.

RICHARD VARNER, IDA GROVE, DECEMBER 8, 1913.

General Condition of Crops and Season—Good.

Corn—Average about 50 bushels per acre. Good.

Oats—Good yield and a good crop.

Wheat—Not very much raised but good yield.

Rye—None.

Barley—Good.

Flax—None.

Buckwheat—None.

Millet—Very little raised.

Sorghum—None.

Timothy—About two tons to the acre.

Clover—Fair crop.

Prairie Hay—About one ton to the acre.

Potatoes—Short crop.

Vegetables—Short crop.

Apples—Short crop.

Other Fruits—Short.

Cattle—High and not many fed.

Horses—Good grade.

Swine—Short; many died from cholera.

Sheep—Some fed for market but not many in the yards now.

Poultry—Five cars shipped from this point and a good supply now on hand.

Bees—All died last winter.

Drainage—None.

Other Industries—Doing well.

Lands—Selling at advances in price.

IOWA.

J. P. BOWLING, VICTOR, SEPTEMBER 12, 1913.

General Condition of Crops and Season—Long drouth bad for corn and grass; small grains fair yield and quality. Hay crop good.

Corn—Good, considering the drouth.

Oats—Good.

Wheat—Good; not much raised.

Rye—Very little raised.

Barley—Good.

Flax—None raised here.

Buckwheat—Good.

Millet—Not much raised.

Timothy—Good.

Clover—Good.

Prairie Hay—Good.

Potatoes—Poor crop.

Vegetables—Poor on account of drouth.

Apples—Fair.

Other Fruits—All small fruits poor on account of drouth.

Cattle—Scarce and high priced.

Horses—High priced.

Swine—Good many died of cholera in this county.

Sheep—Good.

Poultry—Good.

Bees—Not many.

Report of Fair—Held at Victor, August 12-14. We had a good display of all live stock except swine. Weather good the first day and a large attendance; poor weather the last day and small attendance.

IOWA.

J. A. OGLE, WILLIAMSBURG, 1913.

General Condition of Crops and Season—The amount of rainfall throughout this section was far below normal, especially during the months of July and August. This, together with the extreme heat caused a shortage in practically all farm crops.

Corn—Somewhat below the average; good quality.

Oats—Fair, average yield and of excellent quality, especially in the eastern portion of the county.

Wheat—Not raised any more in this locality.

Rye—None raised.

Barley—Have known of none for the past five years.

Flax—None raised.

Buckwheat—Never saw any in this vicinity.

Millet—None sown.

Sorghum—Very little cultivated except in the southeast part of the county.

Timothy—Fine quality; but not quite up to the average yield, owing to the dry weather.

Clover—Same as timothy.

Prairie Hay—Have not seen any in this section for years.

Potatoes—A fair crop of the early varieties. The late ones below the usual yield.

Vegetables—Practically a normal yield.

Apples—An especially good crop, both in yield and quality.

Other Fruits—Crop of peaches excellent, both in yield and quality.

Cattle—A great deal of interest is taken in the breeding of fine cattle; farmers have fully awakened to the necessity of raising cattle of the highest type in order to secure the best results from high priced land.

Horses—I question if there is a section or county in the state that can show better horses generally than we have. Many are shipped to eastern markets.

Swine—Poland China and Duroc Jerseys are the leading breeds. There are also some fine pens of Chester White, with a growing demand for them.

Sheep—Not raised to any extent.

Poultry—A great industry and is the greatest money producing industry in Iowa county.

Bees—Very few kept so far as we have been able to discover.

Drainage—Much attention being given to drainage. Practically all waste lands have been reclaimed by tile drainage.

Lands—Have rapidly increased in value the past few years and prices now range from $200 to $250 per acre. This is owing to the fact that people are beginning to realize that Iowa is the best all around producing state in the union.

Report of Fair—Held at Williamsburg on September 9th-11th. Owing to the extreme heat the exhibits were not as large as usual but the quality was good. We had excellent attractions and altogether we had a successful fair.

IOWA.

F. H. KARSTEN, MARENGO, OCTOBER 23, 1913.

General Condition of Crops and Season—Not up to last year. Not enough rain.

Corn—General average 37 bushels per acre; quality good.

Oats—General average 34 bushels per acre; quality fair.

Wheat—Very little raised.

Rye—Very little raised.

Barley—Very little raised.

Flax—None.

Buckwheat—None.

Millet—None.

Sorghum—Good stand.

Timothy—Fair.

Clover—Good crop.

Prairie Hay—Very little.

Potatoes—Poor.

Vegetables—Good.

Apples—Good.

Cattle—Not many. Feeders being shipped in now.

Horses—Average price; good supply on hand.

Swine—Nearly all taken by cholera.

Sheep—Mostly raised by the Amana Society.

Poultry—Good condition and good prices prevail.

Bees—Limited supply; honey shipped in.

Drainage—Great deal of it done.

Lands—Price a little higher every year. Good farms bring $200.

Report of Fair—A successful fair.

JACKSON.

W. D. MCCAFFREY, MAQUOKETA, OCTOBER 4, 1913.

Corn—Good.

Oats—Fair.

Wheat—Fair.

Rye—Good but not much raised.

Barley—Not much raised.

Flax—None raised.

Buckwheat—Good, but not much raised.

Millet—None raised to speak of.

Sorghum—None raised.

Timothy—Good.

Clover—Just a fair crop.

Prairie Hay—None raised.

Potatoes—Very small yield.

Vegetables—A good crop for most of the vegetables.

Apples—Good.

Cattle—Lots of good cattle raised.

Horses—Lots of horses and good ones.

Swine—A great many swine raised. No cholera in this county.

Sheep—Not many raised.

Poultry—Lots of poultry and plenty of fancy ones.

Bees—Not many in this locality.

Drainage—Natural.

Other Industries—Progressing.

Report of Fair—Held September 2-5. Good weather. The largest and best fair we have had for years.

JASPER.

F. E. MEREDITH, NEWTON, SEPTEMBER 30, 1913.

General Condition of Crops and Season—All above the average except corn.

Corn—Fair. Dry weather during the latter part of the summer.

Oats—Good.

Wheat—Good.

Rye—Good.

Barley—Good.

Flax—None.

Buckwheat—None raised.

Millet—None.

Sorghum—None.

Timothy—Good.

Clover—Good.

Prairie Hay—Good.

Other Grains and Grasses—Good.

Potatoes—Fair.

Vegetables—Good.

Apples—Good.

Other Fruits—Good.

Cattle—In good condition and prices high.

Horses—In good condition and prices high.

Swine—Good. However, more cholera in the county than ever before.

Sheep—Good.

Poultry—Good.

Bees—Good.

Drainage—There has been one large drainage ditch dug this year and another one ordered and lots of tiling done this year.

Other Industries—Factories in this county have had a prosperous year.

Report of Fair—We had the best fair we have ever had but not the usual good attendance, which was due to the very hot weather and other attractions in the county.

JEFFERSON.

A. E. LABAGH, FAIRFIELD, OCTOBER 23, 1913.

General Condition of Crops and Season—Crops are generally good, although hurt to some extent by drouth.

Corn—Will average 40 bushels to the acre.

Oats—Average 25 bushels to the acre.

Wheat—Very little grown this season; that is the acreage is unusually small.

Rye—Practically no acreage.

Barley—None.

Flax—None.

Buckwheat—None.

Millet—None.

Sorghum—The quality is exceptionally good; acreage small.

Timothy—About one-half crop.

Clover—Big crop and a large acreage cut for seed.

Prairie Hay—None.

Potatoes—Were a failure in this locality.

Vegetables—Plentiful and of good quality.

Apples—Large crop.

Other Fruits—Peaches, plums, pears, berries, etc., were in abundance.

Cattle—There are fewer cattle in this county than has been the case for years.

Horses—No change from last year.

Swine—Large losses from cholera, etc.

Sheep—No change from 1912.

Poultry—No change from 1912.

Bees—An excellent year for the production of honey regardless of the dry weather.

Drainage—No county drainage in this county and very little private work.

Other Industries—Have enjoyed a prosperous year.

Lands—Continue to rise in value although there have not been many transfers or sales reported.

Report of Fair—Held August 6 to 8 and was a success in every way except in the entries of live stock.

JOHNSON.

GEORGE A. HITCHCOCK, IOWA CITY, OCTOBER 18, 1913.

General Condition of Crops and Season—Crops will hardly come up to the average. The season was bad, due to the lack of rainfall and extreme heat after a wet spring.

Corn—Not an extra good stand. That planted early is poor but that planted later will make a fair crop.

Oats—Some parts of the county fair; others below the average by one-third.

Wheat—Generally good quality; yield average.

Rye—A good average yield but not much grown.

Barley—About one-half crop on account of dry weather; quality good.

Flax—None raised.

Buckwheat—Very little sown.

Millet—Very little grown on account of dry weather.

Timothy—The new seeding better than the old. The hay is extra fine.

Clover—Very good; second crop exceptionally good. The yield of seed will be good.

Prairie Hay—Not any to speak of.

Potatoes—Very poor crop. Will have to have them shipped in for home use.

Vegetables—Very scarce and high priced.

Apples—Some orchards that had extra care have yielded well.

Other Fruits—Hardly an average yield; quality good.

Cattle—Not so many as in previous years. Farmers are selling their veal calves instead of raising them.

Horses—Scarce and high prices. The quality is improving.

Swine—Cholera has taken a great many.

Sheep—Not as many as in former years.

Poultry—A good many fancy chickens are being raised and they bring good prices.

Drainage—Farmers are putting in a good deal of tile.

Lands—Seem to be getting higher in price every year and a good many farms have been sold this fall. Prices range from $100 to $250 per acre.

Report of Fair—Held September 2-5. We had an extra good show of horses and ponies. Only one herd of cattle on exhibition and the swine show was about as usual. We anticipate a better fair next year.

JONES.

O. J. BUCKLIN, MONTICELLO, OCTOBER 25, 1913.

Corn—Good.

Oats—Good, except in a few low places.

Wheat—None grown.

Rye—Good.

Barley—Good quality; fair yield.

Flax—None.

Buckwheat—Good.

Millet—Good.

Sorghum—Good.

Timothy—Good.

Clover—Extra good.

Prairie Hay—None.

Other Grains and Grasses—Some alfalfa and good crop of rape.

Potatoes—Poor crop.

Vegetables—Generally good.

Apples—Fair crop.

Other Fruits—Good.

Cattle—Scarce and high in price.

Horses—Good supply; good prices.

Swine—Plentiful; some cholera.

Sheep—Not many raised.

Poultry—Plentiful.

Bees—Healthy. Good honey crop.

Drainage—Low land nearly all tiled.

Other Industries—Dairying a profitable industry.

Lands—Increased valuation about 25 per cent.

Report of Fair—Date August 25-29. Weather was ideal and the attendance large. This fair association has $700 in its treasury after paying every dollar of expense and premiums in full.

JONES.

CLIFFORD W. NILES, ANAMOSA, OCTOBER 7, 1913.

General Condition of Crops and Season—Crops in general are very good.

Corn—Good; about 40 bushels to the acre.

Oats—Twenty bushels to the acre.

Wheat—Good; twenty bushels to the acre.

Rye—Good; twenty-five bushels to the acre.

Barley—Good; thirty bushels to the acre.

Flax—None raised.

Buckwheat—Fair crop; not a large acreage.

Millet—Very little raised in this vicinity.

Sorghum—Very little raised.

Timothy—Good; from one to two tons per acre.

Clover—Very good crop.

Prairie Hay—Good; very little raised here.

Potatoes—Not very good; average of 25 to 50 bushels to the acre.

Vegetables—Good.

Apples—Good and plentiful.

Other Fruits—Good.

Cattle—Quite a number of cattle in this vicinity. They are gradually weeding out the poor cattle and improving the breeds.

Horses—Quite a few heavy horses.

Swine—Good; quite a loss on account of cholera.

Sheep—Not very many.

Poultry—Good.

Bees—Not many.

Drainage—All low lands being drained.

Other Industries—All good.

Lands—Have increased $50.00 on the acre.

Report of Fair—Held in August. We had a large attendance and everything proved satisfactory. One of the best fairs we have ever had.

KEOKUK.

GEO. A. POFF, WHAT CHEER, OCTOBER 21, 1913.

General Condition of Crops and Season—General conditions were not favorable for crops.

Corn—Will average from 30 to 40 bushels per acre.

Oats—Medium yield; average from 30 to 40 bushels per acre.

Wheat—Not much raised; quality good.

Rye—None to speak of.

Barley—None to speak of.

Flax—None raised.

Buckwheat—Very little raised.

Millet—None.

Sorghum—Good, not much grown.

Timothy—Good quality and goes about two tons to the acre.

Clover—Good quality and yields about three tons to the acre.

Prairie Hay—Small amount.

Other Grains and Grasses—About the average yield.

Potatoes—The dry weather cut the crop short and the yield is small.

Vegetables—Fair yield.

Apples—Big crop; selling from 50 to 60 cents per bushel; good quality.

Other Fruits—Average yield. We have not had so large a crop of peaches for years.

Cattle—In good condition and we have a number of large breeders in this county.

Horses—We have many fine horses and breeders are increasing their stock.

Swine—Many, and we have no disease to speak of.

Sheep—Not so many being raised as in former years.

Poultry—The exhibit at the fair was not as large as last year.

Bees—Not many; quality of honey is fine.

Drainage—Good and increasing.

Other Industries—Our industries are all flourishing. Help has been scarce. Wages are good and the people generallly are prosperous.

Lands—Values are increasing.

Report of Fair—The weather was disagreeable on Tuesday but we had a bumper crowd on Wednesday. We were completely rained out on Thursday and the fair was carried over until Friday. This is the first year we have charged 35 cents and we broke all records in attendance.

KOSSUTH.

T. H. WADSWORTH, ALGONA, OCTOBER, 1913.

General Condition of Crops and Season—Season has been somewhat dry but the crops in general have been good.

Corn—Better than an average crop.

Oats—An average crop.

Wheat—Not much wheat grown in this county.

Rye—But little raised.

Barley—About an average crop.

Flax—Very little grown.

Buckwheat—Very little in the county.

Millet—An average crop.

Sorghum—Not much grown in this county.

Timothy—An average crop.

Clover—Above the average.

Prairie Hay—Good.

Other Grains and Grasses—Good.

Potatoes—Early potatoes not very good but the late ones are better.

Vegetables—Not up to the average.

Apples—A big crop.

Other Fruits—An average crop.

Cattle—Not quite as many cattle raised as usual as the farmers are in the dairy business. Quite a number have been shipped in for feeding purposes.

Horses—We have a number of good horses.

Swine—There were a great number of hogs raised in this county this year but cholera has taken most of them.

Sheep—The sheep industry is in pretty good shape.

Poultry—This is a big industry in this county.

Bees—We have a nice lot of honey this year.

Drainage—A great deal of drainage is being done.

Other Industries—In good shape.

Lands—Rising in value very rapidly.

Report of Fair—Held September 16-19. Our fair was very successful this year, although it rained all day the 19th.

LEE.

JOHN WALLJASPER, WEST POINT, OCTOBER 20, 1913.

General Condition of Crops and Season—The general condition of crops has been fair; the season was a little wet in the spring and dry from then until October 18th.

Corn—Suffered from drouth at tasseling time. The crop is from two-fifths to one-half average; quality good.

Oats—A good crop; heavy grain and good quality. Average yield per acre about 35 bushels.

Wheat—Very good quality; average 20 bushels per acre.

Rye—Not much sown.

Barley—Hardly any grown.

Flax—None raised.

Buckwheat—Very little sown; too dry.

Millet—Very little sown; fair crop.

Timothy—Not as good this year as usual.

Clover—Good crop.

Prairie Hay—Not worth mentioning.

Other Grains and Grasses—Several farmers are trying alfalfa but it is not as generally grown as it should be.

Potatoes—A fair crop. The extreme drouth has hurt this crop.

Vegetables—The drouth cut all kinds of late vegetables short.

Apples—A fair crop; quality fair.

Other Fruits—Peaches, grapes and pears a fair crop; plums good, raspberries and blackberries a failure.

Cattle—The extreme drouth of the summer and early fall has been very discouraging to our farmers and feeders. A lot of stuff being shipped out on account of short pasture.

Horses—Commanding a good price and quite an interest taken in this industry by farmers.

Swine—Quite a number are raised but the cholera is playing havoc amongst them.

Sheep—Quite an interest is shown by our farmers and nearly every farm has a small flock of sheep on it.

Poultry—One of our leading industries.

Bees—Very few are kept and it is an industry that should be taken up by more farmers.

Drainage—This territory is well drained.

Other Industries—The big power dam at Keokuk will make this a great manufacturing district. Already factory sites are being located.

Lands—Still advancing in price. Some good land can be bought for $50.00 or $60.00 per acre; $225.00 is the record price of some farms sold in the northern part of the district.

Report of Fair—Held September 23-26. Taking everything into consideration we had the best and biggest fair ever held here on our grounds.

LEE.

CHRIS HAFFNER, DONNELLSON, SEPTEMBER 18, 1913.

General Condition of Crops and Season—Crop conditions fair considering the very drouthy weather.

Corn—Good half crop.

Oats—An average crop; quality good.

Wheat—Good crop; quality fine.

Rye—Good crop; quality good but only a small acreage.

Barley—None.

Flax—None.

Buckwheat—None.

Millet—None.

Sorghum—Fair crop.

Timothy—Fair.

Clover—Good; large crop.

Prairie Hay—None.

Potatoes—Short crop.

Vegetables—Short crop.

Apples—Light crop, owing to the drouth.

Other Fruits—Good crop of peaches.

Cattle—Short-horns and Polled Angus in the lead.

Horses—Percherons predominate.

Swine—Duroc Jersey, Chester White and Poland Chinas predominate.

Sheep—Shropshire and Delaines are the leading breeds.

Poultry—Quite an interest taken in this industry.

Bees—Not much interest taken in this industry.

Drainage—Good natural drainage. Some tiling done.

Other Industries—Making good progress.

Lands—Sell from $75.00 to $200.00 per acre.

Report of Fair—Held at Donnellson August 20-22. The attendance was very good; attractions and exhibits good and altogether the meeting was a financial success.

LINN.

H. T. LOCKWOOD, CENTRAL CITY, SEPTEMBER 23, 1913.

General Condition of Crops and Season—Crops in general are good but the season was a little too dry for the best results.

Corn—An average of about 40 bushels to the acre in this community.

Oats—An average of about 25 bushels.

Wheat—Very small crop.

Rye—A good average crop.

Barley—Good average crop.

Flax—No flax raised in this community.

Buckwheat—Fair average.

Millet—Good average.

Sorghum—Good quality.

Timothy—Fair average.

Clover—Heavy crop; good quality.

Prairie Hay—Short.

Other Grains and Grasses—Light.

Potatoes—Poor average.

Vegetables—Good average.

Apples—Good average crop.

Other Fruits—Fair average crop.

Cattle—Somewhat scarce in this community.

Horses—Good price but scarce.

Swine—Good price but not many of them.

Sheep—Average price; good quality, and good supply.

Poultry—Good average.

Bees—Scarce.

Drainage—On the increase.

Other Industries—Good average.

Lands—The price is gradually increasing and all farms are receiving better care.

Report of Fair—Held September 1-5 at Central City. We had a very good attendance and the gate receipts were better than they have been for several years. We had a good showing of all farm products.

LINN.

GENE FAGAN, MARION, OCTOBER 10, 1913.

General Condition of Crops and Season—About three-quarters of a crop in this vicinity. The season has been dry.

Corn—Acreage 95,756; estimated yield 3,700,000 bushels.

Oats—Acreage 62,111; estimated yield 1,800,000 bushels.

Wheat—Acreage 2,600; estimated yield 16,000 bushels.

Rye—Acreage 1,194; estimated yield 11,000 bushels.

Barley—Acreage 2,600; 24,000 bushels estimated yield.

Flax—None.

Buckwheat—Acreage 100; estimated yield 3,000 bushels.

Millet—Acreage 200; estimated yield 400 tons.

Sorghum—None.

Timothy—4,000 acres; estimated yield of hay, 1½ tons per acre; estimated yield of seed 18,000 bushels.

Clover—300 acres; estimated yield of hay, 2 tons per acre; estimated yield of seed, 500 bushels.

Prairie Hay—Practically none.

Other Grains—Pop corn, 3 acres; estimated yield, 150 bushels.

Potatoes—Acreage, 1,700 acres; estimated yield 5,000 bushels.

Vegetables—All kinds a fair crop.

Apples—Acreage 1,317; estimated yield 30,000 bushels.

Other Fruits—Good.

Cattle—35,000, all kinds.

Horses—16,000, all kinds.

Swine—85,000.

Sheep—5,000.

Poultry—700,000.

Bees—350 stands (estimated).

Drainage—Practically all tiled. Where drainage is needed it has already been done.

Lands—Total acreage in farms, 376,308; number of farms, 2,762; number of acres in farms, buildings, public highways, and feed lots, 13,329.

Report of Fair—Held at Marion, August 18 to 22, 1913.

LOUISA.

D. N. JOHNSON, COLUMBUS JUNCTION, OCTOBER 21, 1913.

General Condition of Crops and Season—During the fore part of the season it was very wet and cold, which delayed seeding and planting up until about July 1st; after that we had a long drouth which continued throughout the rest of the growing season.

Corn—Made very rapid growth, considering the dry season but was fired badly on flat land. Three-fourths of an average crop.

Oats—The fore part of the season being wet and cool was favorable to the growing of oats. The quality was good and the yield 35 to 40 bushels per acre.

Wheat—As there was but very little snow during the past winter wheat is below the average; yield from 20 to 25 bushels.

Rye—Yielded from 15 to 20 bushels per acre, which is about an average crop.

Barley—Very little raised here.

Buckwheat—Very little raised.

Millet—None.

Sorghum—None except for making molasses, which was an average crop.

Timothy—Made good growth in the spring and the yield was very good.

Clover—Made good growth but the first crop was damaged considerably by rain in curing. The second crop was very good considering the drouth.

Prairie Hay—None.

Other Grains and Grasses—Cowpeas are being raised by a great many farmers in this locality and the acreage is increasing each year.

Potatoes—Those planted very early made a fair crop but late ones were a failure on account of the drouth.

Vegetables—Below the average. The watermelon crop was below the average on account of late planting and the drouth. Prices high.

Apples—Large crop of apples but the dry weather caused them to fall off; quality poor.

Other Fruits—Very heavy crop of pears; fair crop of peaches, plums and all kinds of berries. Large crop of cherries.

Cattle—Shortage of cattle, calves and feeders being shipped in by farmers. Milk cows worth from $65 to $100 per head.

Horses—Not many horses on the market, although some are being bought and shipped east at good prices.

Swine—Shortage on account of disease. We had a nice lot of summer and fall pigs.

Sheep—About the average number of sheep are being kept. The industry is not on the increase in this locality on account of dogs.

Poultry—Average; much poultry being stolen this season.

Bees—Average.

Drainage—A great deal of drainage work has been completed in the county this year and it has caused a wonderful advance in the price of land.

Other Industries—Roads are being improved as much as possible with the available funds.

Lands—Not moving so readily on account of high rate of interest on loans and there are not many farms being offered for sale.

Report of Fair—Held September 2-5. Weather was ideal except very hot. The attendance was large and the receipts larger than in previous years. However, our expenses were very heavy on account of building a new track and other improvements.

LYON.

A. S. WOLD, ROCK RAPIDS, OCTOBER 10, 1913.

General Condition of Crops and Season—Good, fair condition.

Corn—Lyon county will have the largest average yield of corn in its history. There is an increase in the acreage planted.

Oats—A bumper crop this year.

Wheat—Both spring and winter varieties good.

Rye—Good yield and quality.

Barley—A fair yield but a little below the average in quality.

Flax—Small acreage; yield and condition good.

Buckwheat—Very little sown.

Millet—Not much grown.

Sorghum—Very small acreage.

Timothy—Both hay and seed a short crop this year.

Clover—A fair crop.

Prairie Hay—Good.

Other Grains and Grasses—Small patches of alfalfa were sown this year and it did remarkably well.

Potatoes—A good average crop.

Vegetables—All kinds are good.

Apples—Better than the average year.

Other Fruits—All fruits a good, fair crop.

Cattle—In fair condition, pastures a little too dry.

Horses—In good condition, pastures a little too dry.

Swine—A large number of hogs have been taken by cholera. At present the disease has abated somewhat.

Sheep—In good condition.

Poultry—In good condition.

Bees—In good condition.

Lands—A good many sales have been made during the summer and fall. Prices range from $115 to $225 per acre; average farm and improvements worth $140 per acre.

Report of Fair—Held at Rock Rapids on August 25-29. Good weather prevailed and our fair was a grand success, financially and every other way.

MAHASKA.

C. F. MOMYER, NEW SHARON, SEPTEMBER 22, 1913.

Corn—Will average one-half crop.

Oats—A bumper crop; good quality and average yield about 40 bushels per acre.

Wheat—Small acreage; good quality.

Rye—Very little grown.

Barley—None.

Flax—None.

Buckwheat—None.

Timothy—Fair; yield about 1½ tons per acre.

Clover—Never better.

Other Grains and Grasses—Practically none.

Potatoes—Very poor.

Vegetables—Poor.

Apples—Large yield but inferior quality.

Other Fruits—Small fruits poor on account of dry weather.

Cattle—Scarce and few on feed; some being shipped in for feeding.

Horses—Good ones are scarce and high in price. Farmers are not breeding as many as in past years.

Swine—We have a great many pigs but they are dying with cholera.

Sheep—Very few sheep.

Poultry—Better quality. One of our most profitable industries.

Bees—Very few but doing well.

Drainage—Very few tile put in this year; too dry.

Lands—Our best farms run from $125 to $250 per acre and a great many changing hands.

Report of Fair—Held September 15-19 at New Sharon and on the whole it was a very profitable fair.

MARION.

CHAS. PORTER, OCTOBER 30, 1913.

General Condition of Crops and Season—Early part of season very good but in May cold and wet weather set in, which resulted in only a fair crop of most grains.

Corn—The early planted making the best yields and the best quality. The crop was badly blown down, making an average of 30 bushels.

Oats—But very little rust; average about 30 bushels per acre.

Wheat—Winter varieties good yield and quality extra fine, making from 20 to 40 bushels per acre. Spring varieties from 12 to 18 bushels per acre; fair quality.

Rye—But little sown; quality fine.

Barley—None.

Flax—None.

Buckwheat—None.

Millet—Fair but not much grown.

Sorghum—Making excellent syrup but not a big return in gallons per acre. The seed helps to make the crop a paying one.

Timothy—Good crop; fine quality and selling at $9.00 delivered.

Clover—First crop good and a fine lot of hay was made. The second crop was generally good and made an extra lot of seed.

Prairie Hay—None.

Other Grains and Grasses—A few are experimenting with alfalfa, reports are fair.

Potatoes—Early planting a fair crop but not a large acreage. The late planting resulted in a poor crop. Now selling at 90 cents per bushel.

Vegetables—Early gardens good but summer and fall planting brought poor returns on account of drouth.

Apples—Trees in good shape generally. The crop greatly damaged by insects. Winter varieties selling from 75c to $1.00.

Other Fruits—All small fruits a fair crop.

Cattle—Not so many as two years ago but the farmers are continually improving their herds.

Horses—Most of our farmers are breeding the heavy draft type with good results. We have a nice lot of young horses in the pastures.

Swine—Generally a large crop of spring pigs reported but disease has taken a great many of them.

Sheep—Not much increase in the number. A good many shipped in for feeding.

Poultry—A good season for chickens and we have a number of fancy breeders in this locality.

Bees—But few kept over the past winter. This has been a good honey season.

Drainage—This county is pretty well drained with tile and open ditches.

Other Industries—Prosperous.

Lands—Well improved farms selling as high as $250 per acre. Not much changing hands this season.

Report of Fair—Held September 9-11, at Pella. Every department was well represented with the exception of farm and garden products. We had good weather but one day and the fair was called off on the morning of the 11th.

MARSHALL.

H. M. WEEKS, RHODES, SEPTEMBER 30, 1913.

General Condition of Crops and Season—Fair; some damage by drouth.

Corn—Generally an average crop; yield will be 35 to 60 bushels per acre.

Oats—A good crop and good quality. Yielded from 35 to 50 bushels per acre.

Wheat—But little spring wheat being grown here. Winter wheat is being grown more and more and it is a good crop, yielding from 25 to 35 bushels.

Rye—I know of none.

Barley—But little raised.

Flax—None.

Millet—The late spring caused considerable ground to be sown to millet. Somewhat hurt by the drouth but generally a good crop.

Sorghum—None.

Timothy—Was a good crop and was put up in good condition. Yielded from 1 to 2 tons of hay per acre. The second crop was injured by drouth.

Clover—Severe winter reduced acreage but the crop was fair and of excellent quality. The second crop was very light on account of the dry weather. Seed crop good.

Prairie Hay—No wild hay except slough hay.

Other Grains and Grasses—Some are having fair success with alfalfa and some are experimenting with sweet clover.

Potatoes—The early crop was cut short by dry weather and the late ones only a light crop.

Vegetables—Gardens suffered from the drouth.

Apples—Plentiful; the showing at the fair was good.

Other Fruits—Most fruits made a fair crop.

Cattle—Not so many farmers engaged in the breeding of pure bred stock; more attention is being given to feeding.

Horses—Good demand for horses at high prices. Heavy draft horses are being bred most extensively in this district.

Swine—Has been a hard season for swine on account of disease; 70 cars of hogs have been shipped from Rhodes since January 1, 1913.

Sheep—Comparatively few are raised in this section of the country. A good many western sheep are being shipped in for feeding purposs.

Poultry—A leading industry. Large shipments of eggs and live poultry are being made from this section. One dealer in Rhodes has shipped 21,000 cases of eggs and 30,000 pounds of live poultry since March 1, 1913.

Bees—But few kept in this vicinity.

Drainage—Nearly all slough land in this county has been reclaimed by private work.

Other Industries—All doing a profitable business.

Lands—Still advancing in value but not quite so much changing hands as last year. Prices range from $100 to $250 per acre. Very few well improved farms held at less than $100 per acre.

Report of Fair—Held September 16-19. We were badly handicapped by the weather; only had one good day, when we had an attendance of about 5,000. I estimate the total attendance at about 7,000. However, in spite of the unfavorable circumstances we call the fair of 1913 a success.

MARSHALL.

WARREN NICHOLS AND W. M. CLARK, MARSHALLTOWN, OCTOBER 7, 1913.

Corn—Estimate of 40 bushels an acre for the county.

Oats—38 bushels per acre.

Wheat—Winter wheat 20 bushels per acre; spring wheat 16 to 18 bushels per acre.

Rye—None raised.

Barley—But little barley raised; yielded 35 bushels per acre.

Flax—None raised.

Buckwheat—None raised for market.

Millet—Only small acreage; yielded about three tons per acre.

Sorghum—None except for family use.

Timothy—Average yield 1½ tons per acre.

Clover—Two tons per acre for the first crop; the second crop made a good yield of seed.

Prairie Hay—None.

Other Grains and Grasses—None.

Potatoes—Early potatoes light crop on account of the dry weather; late potatoes 75 to 80 bushels per acre.

Vegetables—Average crop.

Apples—Good crop; above the average.

Other Fruits—Nearly all fruits a good crop.

Cattle—Not the usual number but they are in good condition.

Horses—Draft horses are increasing in number and quality. More pure bred stallions are being used each year.

Swine—A great many swine taken by cholera. Many of the best breeders and farmers are vaccinating as fast as material can be secured.

Sheep—An increasing industry.

Poultry—More and better poultry in the county than ever.

Bees—But few kept.

Drainage—No public drainage. Nearly every farm needing it has been tiled.

Lands—Each year sees an increase in value of lands. Good farms are being sold at $200.00 an acre.

Report of Fair—Held September 8-12 at Marshalltown. We had good exhibits in nearly all departments and the attendance was larger than any former year. One rainy day cut down our profits but still we have a good surplus for improvements another year.

MILLS.

I. J. SWAIN, MALVERN, OCTOBER 20, 1913.

General Condition of Crops and Season—Season opened with continual excessive moisture and corn planting was delayed until late in May. In June until October no rain fell and fall plowing was delayed.

Corn—It is difficult to intelligently estimate the average yield of corn this year. The crop ranges from a total failure in the dry sections of the county to 50 bushels per acre in sections where there was more rainfall.

Oats—Good crop; yield from 30 to 60 bushels.

Wheat—Above the average in yield and quality; yield 30 to 50 bushels per acre.

Timothy—Fine crop, extraordinary yield and saved in excellent condition.

Clover—The same may be said of this crop as of timothy.

Potatoes—Fair crop and well matured. Yield 50 to 160 bushels per acre.

Vegetables—All vegetables a good yield and of excellent quality.

Apples—Very light and unsatisfactory yield.

Other Fruits—All other fruits were better than apples.

Cattle—In healthy condition. Farmers are continually improving their breeds.

Horses—Much interest taken in the breeding of good horses. The heavy draft types predominate.

Swine—Cholera has taken a great many of our pigs.

Sheep—None raised.

Poultry—Generally in good condition but some localities report loss from disease.

Drainage—Some progress being made in draining by tile and ditches.

Lands—Prices still on the increase, values ranging from $125.00 to $200.00 per acre for the better improved farms.

Report of Fair—Held August 6-8. We consider it the best fair in the history of the association.

MITCHELL.

CARL H. SPAANUM, OSAGE, OCTOBER 10, 1913.

General condition of Crops and Season—In general crop conditions have been good. The season was a little too dry at times.

Corn—The best crop we have had in a year. Of course there was some poor corn but not much. The average yield was from 45 to 50 bushels per acre.

Oats—Not a large yield per acre but the quality was excellent and weight very heavy. Yield about 30 to 35 bushels per acre.

Wheat—Not much raised in this part of the state. Some farmers had good fields and reported good quality and a fair yield.

Rye—I know of none.

Barley—Light yield but good quality.

Flax—Fair yield and quality.

Buckwheat—Very little raised.

Millet—None raised.

Sorghum—Very little raised.

Timothy—Not much timothy raised this year.

Clover—Good clover crop; some farmers report a bushel per acre and some even better.

Prairie Hay—Rather a small crop.

Other Grains and Grasses.—Fair.

Potatoes—Crop very light; reports now would indicate about 90 to 100 bushels per acre.

Vegetables—Not up to the average on account of dry weather.

Apples—Abundant crop of apples; more than we could market.

Other Fruits—Berries a fair yield; plums a poor yield.

Cattle—Farmers are paying more attention each year to the breeding of cattle. A great many farmers are starting pure bred herds.

Horses—Same as cattle.

Drainage—A great deal of tile has been put in this year.

Other Industries—Farmers' creameries and beet raising interests the farmers of late.

Lands—Are increasing in value each year; some farms are selling for $150.00 per acre.

Report of Fair—Held at Osage on September 9-12. The weather was fair but the roads were bad on account of rains nearly every night. Expenses were about as usual and the attendance not quite up to what it should have been.

MONONA.

I. A. BLOCTKY AND J. M. HATHAWAY, ONAWA, OCTOBER 27, 1913.

Corn—75% of full crop.

Oats—75% of full crop.

Wheat—85% of full crop.

Barley—60% of full crop.

Flax—None.

Millet—60% of full crop.

Sorghum—70% of full crop.

Prairie Hay—Full crop.

Other Grains and Grasses—Full crop.

Potatoes—20% of full crop.

Apples—50% of full crop.

Other Fruits—40% of full crop.

Cattle—Normal.

Horses—Normal.

Swine—65% of the usual number on account of hog cholera.

Poultry—80% of the usual number.

Drainage—Too dry.

Lands—Increasing in value on account of raise of taxes.

Report of Fair—Held September 9-10-11-12.

MONROE.

LOREN PERRIN, ALBIA, SEPTEMBER 14, 1913.

General Condition of Crops and Season—Very dry since June 1st.

Corn—Not over 25% of a crop.

Oats—Very good; average 35 to 60 bushels per acre.

Wheat—Fall wheat 20 bushels; spring wheat 14 bushels.

Rye—Very little raised.

Barley—None.

Flax—None.

Buckwheat—None.

Millet—None.

Sorghum—Small acreage but very good.

Timothy—Fair crop; about 1 ton per acre. Not much threshed but seed is of good quality and made about five bushels per acre.

Clover—First crop good, making about 1½ tons per acre. The second crop was short on account of dry weather and not much cut for seed.

Prairie Hay—None.

Other Grains and Grasses—Blue grass short.

Potatoes—Early ones a fair crop; late ones a failure.

Vegetables—Very poor.

Apples—Trees mostly full but falling badly on account of worms and dry weather.

Other Fruits—Berries fair.

Cattle—Generally looking good but not many of them.

Horses—About the usual number and they are in good condition.

Swine—About the usual number. No cholera in the county.

Sheep—Not many.

Poultry—Plentiful and healthy.

Bees—Not many kept.

Lands—Not much changing hands but prices are high.

Report of Fair.—Held August 18-21 and while the weather was very warm and dusty we had a good attendance and good exhibits. We consider the fair very successful.

MUSCATINE.

W. A. COOLING, WILTON, OCTOBER 7, 1913.

Corn—75%.

Oats—Light.

Wheat—Very light.

Rye—Good.

Barley—Fair.

Flax—None.

Buckwheat—None.

Millet—None.

Sorghum—Good.

Timothy—Light.

Clover—Good.

Prairie Hay—None raised.

Potatoes—Early ones fair, late ones poor.

Vegetables—Good.

Apples—Plentiful.

Other Fruits—Lots of fruit.

Cattle—A little short.

Horses—Good price.

Swine—A good deal of sickness.

Sheep—About as usual.

Poultry—Good.

Drainage—A great deal being put in.

Lands—Selling from $100 to $250 per acre.

MUSCATINE.

W. H. SHIPMAN, WEST LIBERTY, OCTOBER 27, 1913.

Corn—The unfavorable weather in the early season made the crop short but later the season was more favorable and the crop is well matured.

Oats—Yield a little below the average and quality fair.

Wheat—Fair yield and very good quality.

Rye—None raised.

Barley—Small acreage; fair yield; good quality.

Flax—None raised.

Buckwheat—None raised.

Millet—Very small acreage; good yield.

Timothy—Good crop and saved in excellent condition.

Clover—Good crop; second cutting extra good.

Potatoes—Light yield but fine quality. Bringing a good market price.

Vegetables—Sweet potatoes a good crop and fair quality.

Apples—Good crop and fine quality; will keep well into the winter.

Other Fruits—Watermelons a big crop in this locality and sold at good prices. Many car loads shipped.

Cattle—Not much interest taken in dairy stock; feeders not very plentiful.

Horses—Good draft horses bringing a good price and there is a good demand for same.

Swine—Some disease and many farmers are not stocking up.

Sheep—Not much interest in this industry. However, we have several pure bred flocks and they bring their owners good returns.

Poultry—No disease. This is a most profitable industry in this county.

Bees—Not many kept but very satisfactory results have been reported.

Drainage—Very few tile put in; farms are already well drained out.

Report of Fair—Held August 18-21, and was a success.

O'BRIEN.

GEORGE GARDNER, SHELDON, OCTOBER 1, 1913.

General Condition of Crops and Season—Condition of crops good; fore part of the season favorable but during August and September it was very dry.

Corn—Extra good; will average 100 per cent or better. A few late fields slightly chaffy on account of the drouth.

Oats—Straw short; quality good. About 75 per cent of the average crop.

Wheat—Fair to good; acreage small.

Rye—Good but not much raised.

Barley—Very short straw; fair to good quality; yield from 15 to 35 bushels.

Flax—None raised.

Buckwheat—None.

Millet—Very little raised; good.

Sorghum—None.

Timothy—Fair to good; very small acreage.

Clover—First crop good; second crop light on account of drouth.

Prairie Hay—Good.

Other Grains and Grasses—None.

Potatoes—Acreage large; condition of crops poor to fair. Yield will run from 25 to 100 bushels per acre.

Vegetables—Good.

Apples—Good.

Other Fruits—Fair.

Cattle—Below the average number on the farms; prices high.

Horses—Large number of colts being raised, most of the draft type.

Swine—An exceptionally large number of pigs were farrowed but during the past 60 days large herds have been wiped out by swine plague. Very few herds have escaped and a large per cent of the hogs were lost.

Sheep—Conditions favorable but very few raised.

Poultry—A great deal of poultry shipped from this vicinity.

Bees—Honey season favorable but very few bees in this locality.

Drainage—Practically all the low land has been tiled. Very little tiling has been done the past season.

Lands—Sales slow, values steady. Prices range from $150 to $200 per acre.

Report of Fair—Held August 19-22. Weather conditions favorable, attendance large, and exhibits good.

O'BRIEN.

CHAS. YOUDE, SUTHERLAND, OCTOBER 16, 1913.

General Condition of Crops and Season—Rainfall for the season was very light, with the exception of March and April. Crops in general have suffered.

Corn—Fair crop; lack of rain when corn was earing made a short yield except in parts where local showers fell at the right time.

Oats—A light crop on account of dry weather; quality good.

Wheat—Not much raised; crop about an average and of good quality.

Rye—Good crop.

Barley—About one-half the average crop.

Flax—Very little raised.

Buckwheat—None.

Millet—One-half crop; very little raised.

Sorghum—Good crop; not much raised.

Timothy—Light crop; suffered from the dry weather.

Clover—Medium crop, better than timothy. Most of second crop cut for seed.

Prairie Hay—Two-thirds of a crop.

Other Grains and Grasses—Alfalfa was a good crop and cured in good condition, most of it being cut three times.

Potatoes—Very light crop.

Vegetables—All garden vegetables higher than usual.

Apples—Good crop.

Other Fruits—Grapes a good crop; cherries good; plums a light crop.

Cattle—Thinner than usual on account of short pastures but high in price on account of scarcity.

Horses—Heavy grades command a good price. Some being bought for shipping.

Swine—The spring crop was good, but cholera has taken over 50%.

Sheep—Many sheep have been shipped in for feeding.

Poultry—An increasing industry. Eggs have been a good price all season.

Bees—Not many kept.

Drainage—Not much done this season.

Lands—Have held their own in price.

Report of Fair—Held September 3 to 5 and one of the best fairs we have ever held. The attendance was good and the exhibits were above the average.

PAGE.

D. D. STILL, CLARINDA, 1913.

General Condition of Crops and Season—The season was very favorable until the first of July. After that we had no rain for about 2 months. Favorable rains since then.

Corn—Extra good, considering the extreme heat and drouth. I think corn will average thirty bushels per acre.

Oats—A fair crop of average quality.

Wheat—About the average in yield and quality.

Rye—Very little raised but what we had was extra good.

Barley—Not enough to mention.

Flax—Not grown.

Buckwheat—Not grown.

Millet—Extra good, very little grown.

Sorghum—Fair crop.

Timothy—Quality extra fine; light crop.

Clover—Every nook and corner had clover this year and both yield and quality are fine.

Prairie Hay—Very little left in the county. A short crop.

Other Grains and Grasses—Fair.

Potatoes—Small yield; quality only fair.

Vegetables—Very scarce.

Apples—Only a few and they are very wormy.

Other Fruits—Good yield of strawberries but all other berries short.

Cattle—Are in good condition. We have about the normal number of breeding cattle and feeders are being shipped in.

Horses—Considerable interest manifested in the breeding of good draft horses. We have a number of young horses and some farmers are feeding them for spring market.

Swine—More hog cholera than we have ever had before in Page county. We will have fewer hogs for sale this winter than for several years.

Sheep—The sheep industry is on the increase. We have several small flocks in the county and more than the usual number are being shipped in for feeding purpose.

Poultry—One of our leading industries.

Bees—Not as many as in former years.

Drainage—More tile used each year.

Other Industries—Doing well.

Lands—Not much changing hands except at auction. Prices high.

Report of Fair—Held September 8-12th.

PAGE.

A. W. GOLDBERG, SHENANDOAH, OCTOBER 9, 1913.

General Condition of Crops and Season—Good until the drouth set in about midsummer.

Corn—About a half crop.

Oats—Heavy crop.

Wheat—Heavy crop.

Rye—None to speak of.

Barley—None.

Flax—None.

Buckwheat—None.

Millet—I know of none.

Sorghum—I know of none.

Timothy—Good crop.

Clover—Heavy crop.

Prairie Hay—We have but little, but that made a good crop.

Other Grains and Grasses—Good until the drouth set in.

Potatoes—Not a very good crop.

Vegetables—Early ones good, late ones poor.

Apples—Not very good.

Other Fruits—Lots of peaches but other fruits were not so good.

Cattle—Doing nicely; not so many as in former years.

Horses—Lots of horses and a good market for them.

Swine—Lots of hogs but cholera has taken a good many of them.

Sheep—Not much of a sheep country.

Poultry—Normal. This has been a good year for poultry and prices are high.

Bees—Very few.

Drainage—Good.

Lands—Going higher in price and a good demand for same.

Report of Fair—Held August 11-15. Good crowds, splendid program, and everybody boosting for it.

POCAHONTAS.

E. A. ELLIOTT, FONDA, OCTOBER 30, 1913.

Corn—Fair; about 10% soft or damaged by frost.

Oats—70 to 75% of an average crop.

Wheat—Good average crop.

Barley—Less than the average crop.

Flax—Fairly good crop but only a small acreage.

Millet—Heavy crop.

Sorghum—Good crop; quality good.

Timothy—Quality good; average crop.

Clover—Better than the average crop; quality good.

Prairie Hay—Light crop.

Other Grains and Grasses—Possibly 75% of an average crop.

Potatoes—50 to 60% of a crop.

Vegetables—Less than the average crop.

Apples—Unusual crop; above the average.

Other Fruits—Less than the average crop.

Cattle—Scarce; few on feed. Young stock mostly shipped out to market.

Horses—Average number and of better quality than usual. High prices prevail, ranging from $125.00 to $250.00 per head.

Swine—Plenty of pigs but we lost a good many on account of cholera.

Sheep—The average number of spring lambs and they are in a thrifty condition.

Poultry—We have a nice lot of healthy young ducks, chickens and turkeys.

Bees—Below the average.

Drainage—Our chief industry in this county.

Other Industries—Tile and cement factories fairly prosperous.

Lands—Increasing in value, ranging in price from $85.00 to $175.00.

Report of Fair—Held August 5-8. We had good exhibits, attendance and racing.

POTTAWATTAMIE.

CALEB SMITH, AVOCA, OCTOBER, 1913.

General Condition of Crops—Had an abundance of rain in the early spring, which made the season late for corn planting, but from the middle of July to the 10th of September very little rain fell. After that we had plenty of moisture.

Corn—A good stand, but on account of the dry weather during July and August we have only 60% of a full crop.

Oats—A good crop and of good quality.

Wheat—Winter wheat very good; spring wheat above the average and quality very good.

Rye—Very little raised but the quality is good.

Barley—Not much raised but the color and weight is good.

Flax—None raised.

Buckwheat—None.

Millet—Very little raised.

Sorghum—None.

Timothy—A good crop and quality fine.

Clover—An average crop and secured in good condition.

Prairie Hay—Above the average crop and secured in good condition. Very little left in this county.

Other Grains and Grasses—Each year farmers are raising more alfalfa and they find it a paying crop.

Potatoes—An average acreage but the yield was light on account of the dry weather during July and August.

Vegetables—A light yield.

Apples—A small crop.

Other Fruits—A good crop of small fruits, such as cherries, raspberries, strawberries and grapes.

Cattle—The grade is improving and there are quite a number of pure bred herds in the county. Dairying is carried on to a considerable extent.

Horses—Each year more attention is being paid to the raising of good draft horses. Supply not adequate to the demand.

Swine—Considerable disease among the swine.

Sheep—Very few raised but more and more fed for the Omaha markets.

Poultry—A good year for poultry and good prices have prevailed for both eggs and poultry.

Bees—Hardly an average year for bees on account of the dry weather during July and August.

Drainage—Not much done this year.

Lands—Increasing in value but not as much changing hands as a few years ago.

Report of Fair—Held at Avoca September 9-12. The exhibits were up to the average but on account of the rainy weather on Tuesday and Wednesday the fair could not be called a financial success.

POWESHIEK.

J. T. CESSNA, GRINNELL, SEPTEMBER 29, 1913.

Corn—70% of the average crop; quality fair.

Oats—95%.

Wheat—None raised.

Rye—None raised.

Barley—Very little raised.

Flax—None raised.

Buckwheat—None.

Timothy—85% of the average crop.

Clover—115%.

Prairie Hay—None.

Potatoes—25%.

Vegetables—90%.

Apples—100%; poor quality.

Other Fruits—Cherries, plums and peaches good.

Cattle—Condition good but not so many as usual.

Horses—Normal.

Swine—Average number in the spring but they are dying fast on account of disease.

Sheep—Normal.

Poultry—Good.

Other Industries—Normal.

Lands—Advancing; good land selling from $175 to $225 per acre; rough land from $100 to $150 per acre.

Report of Fair—Held September 3-5, at Grinnelll and was a financial success. All expenses paid in full and money in the treasury.

POWESHIEK.

JAS. NOWAK, MALCOM, OCTOBER 29, 1913.

General Condition of Crops and Season—The season was late; spring was favorable but a severe drouth came on during July and August. Plenty of rainfall after September 15th.

Corn—Will yield 30 to 35 bushels; fair quality and good price.

Oats—About 40 bushels to the acre; medium grade.

Wheat—Yielded from 15 to 20 bushels per acre; quality good.

Rye—Yielded 18 to 22 bushels; good grade.

Barley—Average yield 25 bushels per acre; good quality.

Flax—None.

Buckwheat—Very little raised; fair crop.

Millet—Very little grown; good crop.

Sorghum—A good fair yield.

Timothy—About 2½ tons to the acre; seed went about 8 bushels per acre.

Clover—Hay about 2½ tons per acre; seed about 2 bushels to the acre.

Prairie Hay—None.

Other Grains and Grasses—Pastures were good in the spring but the dry summer has put them back.

Potatoes—A very small crop on account of the drouth.

Vegetables—Small yield on account of the dry weather in July and August.

Cattle—Scarce and high in price.

Horses—Bring high prices and are in good condition.

Swine—The swine plague has again caused great losses. Prices are high.

Sheep—Not many raised here.

Poultry—Profitable and bring good prices. Eggs are high.

Bees—About an average crop of honey.

Drainage—Lots of tile used.

Other Industries—The various manufacturing interests of the county appear to be in a prosperous condition.

Lands—Still increasing in price; average $150 to $250 per acre.

Report of Fair—Held August 19-20 at Malcom. We had a good show of horses but other live stock departments were light. We had about the average county fair.

PLYMOUTH.

GEO. M. SMITH, LE MARS, DECEMBER 6, 1913.

General Condition of Crops and Season—Crops medium; latter part of season very dry.

Corn—Decrease from year of 1912 although the acreage is larger. The quality is fair. The outlook in July was for a bumper crop but it was too dry in August for the development of the corn.

Oats—Quality good; average 33 bushels per acre.

Wheat—Quality good; average yield 12 bushels per acre.

Rye—Very little raised.

Barley—Acreage less than in previous years; quality good. Yield about 30 bushels per acre.

Flax—None.

Buckwheat—None.

Millet—Not much sowed this year.

Sorghum—None.

Timothy—Fair.

Clover—Good crop considering the season.

Prairie Hay—Not a large acreage this year, but a good crop.

Other Grains and Grasses—Alfalfa did well.

Potatoes—Somewhat of a failure; not enough for home consumption.

Vegetables—Poor.

Apples—Very poor crop.

Other Fruits—Plums a fair crop.

Cattle—Cattle are looking fine and we have the average number.

Horses—Demand is mostly for the large heavy draft horse.

Swine—More cholera than for a number of years.

Sheep—Many farmers raise sheep in the western part of this county and they have done exceptionally well this year.

Poultry—A very profitable industry in this county.

Bees—Not many interested in this industry.

Other Industries—Doing a profitable business.

Lands—Selling from $150 to $200 per acre but not much demand for same.

Report of Fair—Held a short course in July but interest seems to be lagging and it was not well supported.

SAC.

GUS STROHMEIER, SAC CITY, OCTOBER 6, 1913.

General Condition of Crops and Season—Season backward to start with but the balance of the season was fair. Crops are only average but the quality is good.

Corn—In good shape but not more than the average crop, yielding on the average of 33 bushels per acre. Out of the way of frost.

Oats—Early and late oats in fair condition but a light crop. Yielding on the average of 36 bushels.

Wheat—Good quality of winter wheat but not much here.

Rye—Good quality this year but only a small amount sown.

Barley—Fair but not much raised.

Flax—Hardly any raised here but quality is fair.

Buckwheat—Hardly any raised this year.

Millet—In fine shape and considerable grown.

Sorghum—Only a fair yield and used mostly for home consumption.

Timothy—Good yield and fine quality.

Prairie Hay—Not much left.

Potatoes—Not a large crop on account of drouth.

Vegetables—Only fair.

Apples—Good quality but short supply.

Other Fruits—Only fair.

Cattle—In good condition but very short supply.

Horses—Good and high prices prevail.

Swine—Not many here as hog cholera has taken a great many.

Sheep—A fair supply shipped in and doing fine.

Poultry—In good shape and a good supply.

Bees—Honey is about as fine as I ever saw but we do not have many bees.

Drainage—Most farms well tiled now.

Other Industries—In good condition.

Lands—Some changing hands at from $125 to $250 per acre.

Report of Fair—Good crowds and fine weather. No accidents of any kind and the best of attractions.

SHELBY.

JOS. F. BEH, HARLAN, OCTOBER 29, 1913.

Corn—About three-fourths of a normal crop; quality excellent.

Oats—About a normal yield.

Wheat—About a normal yield.

Rye—Not much grown.

Barley—Little below normal; good quality.

Flax—None grown.

Buckwheat—Very little grown.

Millet—Crop of little consequence; season too dry.

Sorghum—Good crop; but very little grown.

Timothy—Good, normal crop.

Clover—Good, normal crop.

Prairie Hay—Good full crop.

Other Grains and Grasses—Alfalfa crop good; acreage being increased rapidly.

Potatoes—Very poor yield generally.

Vegetables—Poor crop generally.

Apples—Poor crop.

Other Fruits—Generally a poor crop.

Cattle—A growing industry.

Horses—An increase in the breeding of draft horses.

Swine—The usual number of pigs. However, we have had heavy losses from swine plague.

Sheep—An increasing industry.

Poultry—Normal production

Bees—Very little interest taken in apiary.

Drainage—Business has increased rapidly since the last session of the legislature.

Other Industries.—Dairying increasing as is also the canning industry.

Lands—Values slightly increasing.

Report of Fair—Held Auugust 18-21.

STORY.

F. H. GRAVES, AMES, OCTOBER 27, 1913.

General Condition of Crops and Season—Generally good.

Corn—95%.

Oats—60%.

Wheat—90%.

Rye—None.

Barley—None.

Flax—None.

Buckwheat—None.

Millet—None.

Sorghum—Only a small acreage.

Timothy—70%.

Clover—70%.

Prairie Hay—None.

Potatoes—25%.

Vegetables—Good.

Apples—80%.

Cattle—Good condition; no disease.

Horses—Good price; no disease.

Swine—Scarce on account of cholera.

Sheep—Limited number.

Poultry—Plentiful.

Bees—Very few.

Drainage—Well drained.

Lands—From $150 to $200 per acre.

Report of Fair—Held September 31-October 2.

SIOUX.

H. SLIKKERVEER, ORANGE CITY, OCTOBER, 1913.

General Condition of Crops and Season—Crops are normal this year; the season has been rather dry and very hot.

Corn—Will yield from 40 to 45 bushels per acre.

Oats—Will yield from 30 to 40 bushels per acre.

Wheat—Will be an average of 15 bushels per acre.

Rye—None.

Barley—Yield 15 to 20 bushels per acre.

Flax—None.

Buckwheat—None.

Millet—About an average crop; hardly any raised for seed.

Sorghum—None.

Timothy—Very little raised, only for hay. The crop is below the average.

Clover—Very little raised and only for hay.

Prairie Hay—An average crop.

Other Grains and Grasses—Good.

Potatoes—Fair crop.

Vegetables—Good.

Apples—Good, big crop.

Other Fruits—Rather below the average.

Cattle—Good condition.

Horses—Good condition.

Swine—Are in bad shape; most all of them are dying from cholera.

Sheep—Good; lambs a good average and in good condition.

Poultry—Good.

Bees—Good.

Drainage—Very good in this county.

Other Industries—Dairying and gardening have been profitable the past season.

Lands—Prices going up and in demand.

Report of Fair—Held September 10-12th. Taking everything into consideration we had a reasonably good fair.

TAMA.

A. G. SMITH, TAMA, SEPTEMBER 30, 1913.

General Conditions of Crops and Season—Average year.

Corn—Average crop.

Oats—Average crop.

Wheat—Average crop.

Rye—Good.

Barley—Not much grown.

Buckwheat—Limited.

Millet—Good crop.

Sorghum—Very little made.

Timothy—A good average crop.

Clover—Fair.

Prairie Hay—Very little.

Other Grains and Grasses—July and August were dry months and cut the grasses short. Since September 1st they have picked up.

Potatoes—Hardly any; too dry.

Vegetables—Short; dry season.

Apples—Good crop; poor grade.

Other Fruits—Average crop.

Cattle—Good condition; all breeds are being improved.

Horses—Good improvement.

Swine—Considerable cholera.

Sheep—Only a few in the county but they are of good grade.

Poultry—Our farmers raise considerable poultry but pay very little attention to breed.

Bees—Very few.

Other Industries—Profitable.

Lands—Selling from $100 to $225 per acre.

Report of Fair—Held September 16-19. Our fair was called off on the 19th on account of rainy weather. Our exhibits were fairly good in all departments.

TAYLOR.

CHARLES N. NELSON, BEDFORD, AUGUST 13, 1913.

General Condition of Crops and Season—Condition of crops good with the exception of corn, which was damaged some by dry weather.

Corn—Estimate damage by drouth 25%.

Oats—Averaging 45 bushels per acre.

Wheat—Average 31 bushels per acre.

Rye—25 bushels per acre.

Barley—None.

Timothy—1½ to 2 tons per acre.

Clover—2 tons per acre.

Potatoes—Fair crop of early ones but late ones very short.

Vegetables—Good.

Apples—Above the average.

Other Fruits—Excellent.

Cattle—Normal.

Horses—Above the average.

Swine—Above the average.

Sheep—Fair.

Poultry—Good.

Bees—Good.

Other Industries—Mercantile business has been good.

Lands—No lands changing hands at present but prices are steadily advancing; prices range from $90 to $175 per acre, depending upon the lay of the land and the improvements and location.

Report of Fair—Held July 29, to August 5th. We had good exhibits, good crowds and a big attendance. We consider it the best fair we have had in twenty years.

VAN BUREN.

D. A. MILLER, MILTON, OCTOBER, 13, 1913.

General Condition of Crops and Season—The first part of the season promised well for the crops but the drouth during the summer damaged all crops somewhat, especially corn.

Corn—Only about one-half the average crop. Quality good.

Oats—Excellent; yield from 40 to 60 bushels.

Wheat—Good, yield from 18 to 25 bushels.

Rye—Acreage small; yield good.

Barley—None raised.

Flax—None raised.

Buckwheat—Only a small acreage.

Millet—Good crop; average acreage.

Sorghum—Acreage small; good crop.

Timothy—Only about one-half crop; good quality.

Clover—Acreage small; yield large.

Prairie Hay—None to speak of.

Other Grains and Grasses—Good early part of season but injured by the extreme dry weather during the summer.

Potatoes—Small yield; large acreage.

Vegetables—Small yield.

Apples—Large yield but inferior quality.

Other Fruits—Excellent quality; large yield.

Cattle—A shortage of cattle; only about 25% on feed.

Horses—Average number; quality good and prices range from $100 to $225 per head.

Swine—Shortage; no cholera in this county as yet.

Sheep—The average number.

Poultry—Lots of poultry and prices are good.

Bees—Only a small number.

Drainage—Good.

Other Industries—Flourishing.

Lands—Values range from $75 to $150 per acre. Farms are continually becoming more improved and not many farms changing hands.

Report of Fair—Held September 16-19 at Milton. The best fair we have held for several years.

WAPELLO.

H. R. BAKER, ELDON, SEPTEMBER 24, 1913.

General Condition of Crops and Season—Very good considering the unusual hot dry weather during the latter part of June up to the middle of September.

Corn—A good stand. Prospects are for a three-fourths crop; some farmers claiming 60 bushels to the acre.

Oats—Good quality and harvested in good shape. Yielding from 20 to 48 bushels per acre.

Wheat—More winter wheat than spring wheat; quality and yield good. Price ranges from 76 to 78 cents.

Rye—Not much sown; good quality; price 50 cents.

Barley—None.

Flax—None.

Buckwheat—None.

Millet—Fair crop; good quality.

Sorghum—The drouthy season cut the crop short but the quality is good.

Timothy—Very good crop; about 1½ tons per acre and of fair quality. Sells for $12.00 per ton baled.

Clover—Good average crop and mostly harvested in good shape. Selling at $8.00 to $9.00 per ton baled.

Prairie Hay—None.

Potatoes—Light crop on account of the drouth.

Vegetables—Early ones good; late ones poor.

Apples—The exhibit of apples at our fair would indicate a good crop.

Other Fruits—Plenty of peaches.

Cattle—Scarce and high priced.

Horses—Plentiful and well bred. In driving through the country one sees more horses than cattle.

Swine—Quite a good crop of spring pigs of good breeding. No disease reported.

Poultry—Healthful condition and considerable interest is manifested in the raising of poultry.

Sheep—Not many raised in this locality and only small flocks are kept.

Bees—Very few kept.

Drainage—Not as much drainage being put in this season as usual.

Other Industries—No manufacturing plants here except our pressed brick plant, which does a good business.

Lands—Not much changing hands but land is selling from $100 to $150 per acre.

Report of Fair—Held September 2-5, with splendid weather. Our attendance was a little light on account of a light field of harness horses and disappointment in regard to our aeroplane contract.

WARREN.

JOE M'COY, INDIANOLA, OCTOBER 20, 1913.

General Condition of Crops and Season—About up to the average; some sections of the county yielded short crops and others above the average.

Corn—Fair.

Oats—Good.

Wheat—Good.

Rye—Not much grown.

Barley—Not much grown.

Flax—None.

Buckwheat—None.

Millet—Not much grown.

Sorghum—Not much grown.

Timothy—Nearly all mixed with clover.

Clover—Good; considerable hulled and turned out good.

Prairie Hay—Not much.

Potatoes—Nearly a failure

Vegetables—Good quality and good yield.

Apples—Good.

Other Fruits—Good.

Cattle—A great many range cattle have been shipped in. Plenty of roughness to winter them.

Horses—About average; more colts than usual.

Swine—We had a nice lot of pigs but cholera is sweeping the county and most of the old hogs have been shipped out on this account. Some localities have lost all of their swine.

Sheep—Average; some feeding lambs.

Poultry—Good.

Bees—Not many kept.

Drainage—On the increase.

Lands—Still advancing.

Report of Fair—The best fair ever held. All departments full with the exception of swine. We had a special colt show in which we had thirty-nine entries and all good colts.

WAYNE.

E. E. BETTIS, CLIO, NOVEMBER 29, 1913.

General Condition of Crops and Season—In the early part of the season it was cold and wet, later it turned hot and dry, which caused a shortage of most all crops.

Corn—The corn crop promised to be a bumper crop until the drouth set in. The yield will be short of the average crop but the quality is good.

Oats—Fairly good.

Wheat—Fair.

Rye—None to speak of.

Barley—None.

Flax—None.

Buckwheat—None.

Millelt—Very light because of the drouth.

Sorghum—None.

Timothy—Light; about three-fourths ton per acre. The qualilty was good and some cut for seed.

Clover—None to speak of.

Prairie Hay—Very little.

Other Grains and Grasses—Pastures short on account of the drouth.

Potatoes—Almost a failure.

Vegetables—None.

Apples—Very scarce.

Other Fruits—Light crop.

Cattle—Not very plentiful and in good demand.

Horses—Fair lot of horses and prices are good.

Swine—Plenty of hogs in the spring but cholera has taken most of them.

Sheep—Have been scarce but a good many have been shipped in this fall.

Poultry—About the same as usual.

Bees—None to speak of.

Drainage—Owing to the natural drainage not much tile is used.

Other Industries—None.

Lands—Not much changing hands this year. The average farm would sell for about $75 per acre.

Report of Fair—Held at Clio September 11-12. It rained on the 11th and we held over one day. We had a very good crowd.

WAYNE.

LOREN JOHNSTON, SEWAL, OCTOBER 28, 1913.

General Condition of Crops and Season—Season was drouthy.

Corn—30 bushels.

Oats—45 bushels.

Wheat—25 bushels.

Rye—20 bushels.

Barley—I know of none.

Buckwheat—I know of none.

Millet—Not much raised.

Sorghum—Not much grown.

Timothy—1½ tons.

Clover—1½ tons.

Potatoes—Small yield .

Vegetables—Small yield.

Apples—Not very good.

Cattle—Scarce and high.

Horses—A very good supply and they command a fair price.

Swine—Not an over supply; some cholera in the county.

Sheep—A few flocks kept.

Poultry—A good supply.

Bees—None to speak of.

Lands—$60 to $130 per acre.

Report of Fair—Held September 4-6, at Sewal.

WEBSTER.

WM. H. BLACK, FT. DODGE, OCTOBER 1, 1913.

General Condition of Crops and Season—The season has been favorable for all crops; notwithstanding the fact that at times it was very dry.

Corn—Despite late planting the crop is of good quality and yield.

Oats—Very good quality and a fair crop. Some fields running around 65 bushels per acre and some as low as 30 bushels.

Wheat—Spring wheat did very well but winter wheat did not do so well owing to the open winter. It yielded about 25 bushels per acre.

Rye—Very little grown in this locality but the quality is good.

Barley—Practically none.

Flax—Acreage small but the yield was good.

Buckwheat—None raised.

Millet—Very little raised but it does well.

Sorghum—Very small acreage but the yield was good.

Timothy—Good crop generally although in some places it was poor.

Clover—Very good crop of clover hay. This year's seeding looks a little unfavorable.

Prairie Hay—Small acreage but the yield was good.

Potatoes—Only a fair crop; some fields will yield around 175 bushels per acre and others only 25 bushels per acre.

Vegetables—Everything good.

Apples—Only a fair crop; new orchards did very well but the older ones were a complete failure.

Other Fruits—No plums, small crop of cherries and a few grapes.

Cattle—Fewer raised every year but the farmers are gradually learning the value of pure bred sires and the grades are improving.

Horses—Farmers are using only registered stallions now and there is much interest in the raising of good horses.

Swine—We had a nice lot of pigs in the spring but cholera has taken a good many of them.

Sheep—Very few in this county but they do well.

Poultry—A prominent industry in this locality.

Bees—Have not done so well as in some previous years.

Drainage—Very few farms now that are not tiled.

Other Industries—Dairying has proved a good business this year.

Lands—Range from $100 for unimproved lands to $225 for the best farms.

Report of Fair—Proved a success in all respects except financially. The weather was most unfavorable and we are behind about $500.

WINNEBAGO.

M. M. THOMPSON, FOREST CITY, OCTOBER 23, 1913.

General Condition of Crops and Season—Crops in general were good and the yields up to the average of previous years. The season was backward in the spring and much corn was not planted until the last of May and the first of June.

Corn—Average crop; yielding from 35 to 40 bushels.

Oats—Averaged from 40 to 50 bushels.

Wheat—25 to 30 bushels per acre.

Rye—None raised.

Barley—Crop below the average; yielded 10 to 20 bushels per acre.

Flax—None raised.

Buckwheat—But little raised.

Millet—Only grown in small patches.

Sorghum—Not very much planted; a good crop.

Timothy—Good yield; average crop.

Clover—Heavy crop; above the average.

Prairie Hay—None raised.

Other Grains and Grasses—None.

Potatoes—Light crop; yielding from 100 to 150 bushels per acre; fine quality.

Vegetables—Good crop.

Apples—About 90 per cent of the usual crop.

Other Fruits—None.

Cattle—Average increase.

Horses—Average increase.

Swine—Large number produced but a great many died from cholera.

Sheep—Only small flocks raised.

Poultry—Good year for poultry.

Bees—Only a few kept.

Drainage—Large amount of tiling done.

Lands—Increased since last year from $15 to $20 per acre and are now selling from $120 to $140 per acre.

Report of Fair—Held September 9-12, at Forest City. Good attendance all four days and the fair was considered the best ever held here.

WINNEBAGO.

J. P. BOYD, BUFFALO CENTER, OCTOBER 20, 1913.

General Conditions of Crops and Season—Good; season a little backward and wet at opening but progressed nicely and closed good.

Corn—Good, well matured and put in the crib in fine condition; average yield 40 to 50 bushels per acre.

Oats—Good, cut and threshed in good condition; average yield about 40 bushels per acre.

Wheat—Fair crop; average yield about 20 bushels per acre.

Rye—Very little raised; quality good.

Barley—Fair crop; yield lighter in weight than usual; average yield about 30 bushels per acre.

Flax—Good; acreage small.

Buckwheat—Very little raised.

Millet—Acreage small but the yield was good.

Sorghum—Very little raised.

Timothy—Good; very little cut for seed; yield of hay large.

Clover—Good, both as to yield and quality.

Prairie Hay—Good yield and put up in fine condition.

Potatoes—Yield fair but quality good.

Vegetables—Good.

Apples—Fine quality and fair yield.

Cattle—Fine condition. The farmers are paying more attention to breeding than heretofore.

Horses—Same as cattle.

Swine—Large numbers were raised but cholera has taken a great many of them. Quite a number were saved by vaccination with tested serum.

Sheep—Not many raised but they have proved profitable.

Bees—Very few kept.

Drainage—A vast amount of drainage being done, especially private drainage.

Lands—Quite a movement in real estate has been experienced this year. The price has advanced from $10 to $25 per acre.

WINNESHIEK.

LAURITZ M. ENGER, DECORAH, OCTOBER 10, 1913.

Corn—A good full crop; would consider it a 100% crop.

Oats—Yield 40 to 50 bushels per acre.

Wheat—Very little raised here.

Rye—Very little raised.

Barley—Light crop; 20 to 30 bushels per acre.

Flax—10 to 12 bushels per acre.

Buckwheat—Little raised.

Millet—Very little raised.

Timothy—4 to 6 bushels per acre.

Clover—But little raised.

Prairie Hay—None that I know of.

Other Grains and Grasses—Good average crop.

Potatoes—Fair crop.

Vegetables—Good crop generally.

Apples—Heavy yield but apples have been falling from the trees badly.

Other Fruits—Good yield.

Cattle—In good condition. Both the beef and dairy breeds are being increased and more attention is being given to breeding.

Horses—Increasing in number and more attention given to breeding.

Swine—The raising of swine is perhaps our greatest industry. While some cases of cholera have been reported no serious harm has been done at this writing.

Sheep—Not extensively raised in this county.

Poultry—All farmers have large flocks of poultry.

Bees—I understand this has been a good year for bees and the yield of honey is large.

Lands—Average price runs from $80 to $100 per acre. However, very little land is changing hands.

Report of Fair—Held at Decorah September 16-19. A new interest was manifested in the fair this year.

WOODBURY.

R. J. ANDERSON, MOVILLE, SEPTEMBER 24, 1913.

Corn—75%.

Oats—50%.

Wheat—85%.

Rye—None.

Barley—35%.

Flax—None.

Timothy—90%.

Clover—100%.

Prairie Hay—50%.

Potatoes—30%.

Vegetables—60%.

Apples—70%.

Cattle—Average number and in fair condition.

Horses—Same as cattle.

Swine—60%.

Sheep—100%.

Poultry—100%.

Bees—60%.

Drainage—100%.

Report of Fair—No fair held.

WOODBURY.

JOE MORTON, SIOUX CITY, OCTOBER 14, 1913.

General Condition of Crops and Season—Owing to the hot dry season the general condition of crops in this county is not up to standard.

Corn—75% of the normal crop. The quality, however, is exceptionally good.

Oats—About 75%. While the yield was below the average the color and weight of the grain was good.

Wheat—Winter wheat was unusually good. Spring wheat, however, was about 65% of the usual yield.

Rye—Very little rye raised in this county.

Barley—About 65% of the normal yield; quality excellent.

Flax—Only a few scattering patches of flax grown.

Buckwheat—Only a few fields in the county.

Millet—About 75% of a crop; unusually good quality.

Sorghum—Little or no sorghum raised in this county.

Timothy—Very light; only about 65% of a crop.

Clover—Unusually good crop; good quality and very good yield.

Prairie Hay—Very poor owing to the hot and dry weather.

Other Grains and Grasses—The alfalfa crop was good and many farmers are taking an interest in this crop.

Potatoes—Not up to the standard. I should judge not over 50% of the normal crop.

Vegetables—Owing to the very hot dry summer vegetables were unusually poor; not over 65% of a crop.

Apples—Good crop of apples this year; good variety.

Other Fruits—Small fruit such as plums, grapes, etc., were very good and the yield normal.

Cattle—Woodbury county carries and feeds a large number of cattle and this winter will see many farmers feeding cattle, as the crops in this county are much better than in many other counties of the state.

Horses—Sound horses with weight are selling very high and there seems to be a good demand for them.

Swine—Owing to hog cholera the stock of pigs has been cut down materially. I should judge not over 75% of the usual production.

Sheep—There are a large number of sheep being fed in this county; more than ever before.

Poultry—Owing to the favorable season the poultry industry has thrived and from all reports the production of poultry will be larger than for many years.

Bees—A good crop of honey, and taken on the whole the year has been a very successful one with beekeepers.

Drainage—A little improvement along this line was made this year. The farms generally are well drained as there has been a great deal of drainage put in in the county in the past ten years.

Other Industries—It is estimated that the output of local factories, exclusive of packing house products, will be increased approximately $1,000,000 in 1913. Packing houses all increasing capacity, especially the Armour & Co. plant.

Lands—There has been a stead increase in the value of lands this year and while there has been but few farms sold the value has increased from 5 to 8 per cent.

Report of Fair—The Interstate Fair was held September 15-19. The fair was unusually successful from the point of attendance and from the general condition of the treasury at the end of the fair. The exhibits in every department were much larger and more comprehensive than ever before. The stock pavilion was filled and breeders are not slow in recognizing the fair as a good point to advertise and sell pure bred stock.

WORTH.

T. O. GROE, NORTHWOOD, SEPTEMBER 15-17, 1913.

General Condition of Crops and Season—Very hot and dry, but all crops are above the average. Killing frost September 21st.

Corn—Good yield and good quality; will average 45 bushels per acre. Many farmers claiming yields of 75 and 80 bushels.

Oats—Quality fine; average yield 40 bushels per acre. A number of fields produced 65 to 75 bushels per acre by actual weight.

Wheat—Good crop, both as to quality and yield.

Rye—Very little raised but good crop wherever sown.

Barley—Good average crop.

Flax—Very little grown; some very good yields reported.

Buckwheat—Small acreage; quality and yield good.

Millet—Not much raised.

Sorghum—None raised.

Timothy—Good crop, nearly all put up in good condition.

Clover—Very good crop; lots of seed in the second crop.

Prairie Hay—None to speak of.

Potatoes—Too dry for early potatoes and the late ones only a fair yield.

Vegetables—About an average crop.

Apples—A very good crop; some orchards making an immense yield.

Other Fruits—Not much raised.

Cattle—In fine condition but scarce. Selling for higher prices than ever before.

Horses—Scarce and high.

Swine—Great deal of cholera. About a third of the hogs have died.

Sheep—Very few raised.

Poultry—Very good season for poultry. This industry is receiving more and more attention and it is a profitable one.

Bees—Very few kept.

Drainage—More tile being put in than ever before and with satisfactory results.

Other Industries—Agriculture the chief industry.

Lands—Prices advancing rapidly and a good deal of land changing hands. Prices range from $75 to $120 per acre.

Report of Fair—Held September 15-17. Exhibits, attendance and weather good. Our attractions were especially good and our receipts will be sufficient to meet expenses.

WRIGHT.

O. W. WHALEY, CLARION, OCTOBER 29, 1913.

General Condition of Crops and Season—General condition of crops good. The season was a trifle unfavorable on account of a wet spring.

Corn—Good.

Oats—Fair.

Wheat—Fair.

Rye—We raise no rye in this county.

Flax—Very little raised.

Buckwheat—Very little raised here.

Millet—Good.

Sorghum—None raised here.

Timothy—Good.

Clover—Very good.

Prairie Hay—Good.

Other Grains and Grasses—Good.

Potatoes—Fair crop.

Vegetables—Good.

Apples—Good.

Other Fruits—Good.

Cattle—Good.

Horses—Good.

Swine—Good; about 50% saved from the original number on account of cholera.

Sheep—Good.

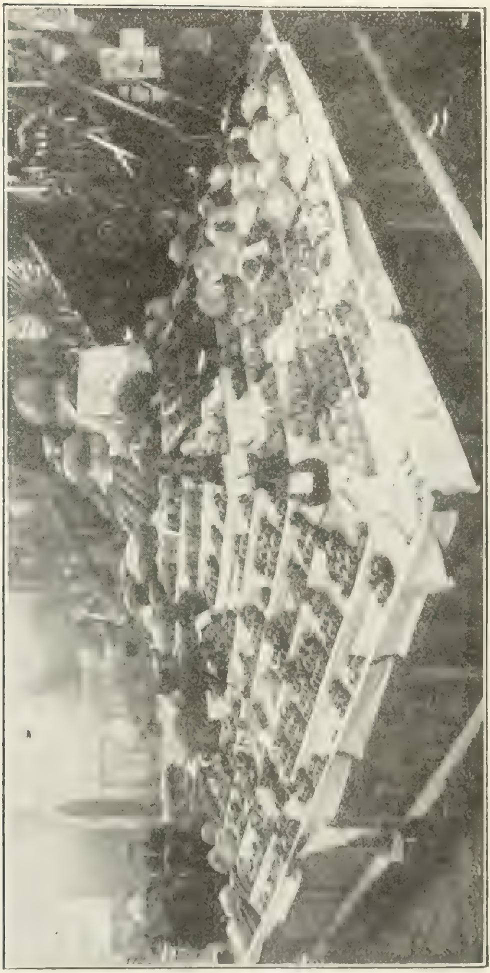
Poultry—Good; a very profitable industry.

Bees—Fair.

Drainage—About sixty drainage districts in this county. About 65% of the land is tiled.

Lands—Selling from $125 to $200 per acre.

Report of Fair—Held September 2-5. The weather was fine, attendance good and exhibits large. The fair was larger and better than any previous fair.



One Table in Horticultural Display at the Iowa State Fair and Exposition

PART XV.

Directory of Associations and Organizations Representing Agricultural Interests in Iowa.

Iowa Department of Agriculture—President, C. E. Cameron, Alta; Vice-President, O. A. Olson, Forest City; Secretary, A. R. Corey, Des Moines; Treasurer, G. S. Gilbertson, Des Moines.

Iowa State Horticultural Society—President, F. P. Spencer, Randolph; Vice-President, W. B. Chapman, Correctionville; Secretary, Wesley Greene, Des Moines; Treasurer, F. O. Harrington, Williamsburg.

Iowa Park and Forestry Association—President, F. O. Harrington, Williamsburg; Vice-President, Elmer M. Reeves, Waverly; Secretary, G. B. MacDonald, Ames; Treasurer, Wesley Greene, Des Moines.

Society of Iowa Florists—President, M. J. Graham, Adel; Vice-President, J. T. D. Fulmer, Des Moines; Secretary-Treasurer, Wesley Greene, Des Moines.

Western Grain Dealers' Association—President, E. A. Fields, Sioux City; Vice-President, E. L. Erickson, Story City; Secretary-Treasurer, Geo. A. Wells, Des Moines.

Iowa Corn and Small Grain Growers' Association—President, F. H. Klopping, Neola; Vice-President, John Coverdale, Ames; Secretary, H. L. Eichling, Ames; Treasurer, Ray Bennett, Ames.

Corn Belt Meat Producers' Association—President, A. Sykes, Des Moines; Vice-President, R. M. Gunn, Buckingham; Secretary, H. C. Wallace, Des Moines; Treasurer, Chas. Goodenow, Wall Lake.

Iowa Beef Producers' Association—President, Chas. Escher, Jr., Botna; Secretary, George H. Burge, Mount Vernon; Treasurer, C. H. Hechtner, Chariton; Association Representative, Rex Beresford, Ames.

Iowa State Highway Commission—Chairman, A. L. Marston, Ames; Commissioner, J. W. Holden, Scranton; Commissioner, H. C. Beard, Mount Ayr; State Highway Engineer, T. H. MacDonald; Consulting Bridge Engineer, J. E. Kirkham, Ames.

Iowa Swine Breeders' Association—President, F. J. Sexsmith, Orient; Vice-President, C. A. Brook, Washington; Second Vice-President, William Alden Anderson, Ellsworth; Secretary and Treasurer, M. P. Hancher, Rolfe.

Iowa State Dairy Association—President, W. B. Quarton, Algona; Vice-President, George Koltlioff, Britt; Secretary, J. J. Ross, Iowa Falls; Treasurer, E. T. Sadler, Waterloo.

Iowa Draft Horse Breeders' Association—President, William Crownover, Hudson; Vice-President, Charles Irvine, Ankeny; Secretary, A. W. Hawley, Ft. Dodge; Treasurer, M. J. Nelson, Cambridge.

Iowa Short-horn Breeders' Association—President, Wm. Herkelmann, Elwood; Vice-President, J. A. Benson, Sheldon; Secretary and Treasurer, E. B. Thomas, Audubon.

Iowa Aberdeen Angus Cattle Breeders' Association—President, Charles M. Russell, Carroll; First Vice-President, W. S. Austin, Dumont; Second Vice-President, R. W. Franks, Renwick; Secretary and Treasurer, W. J. Miller, Newton.

Iowa Bee Keepers' Association—President, Frank C. Pellet, Atlantic; Vice President, J. W. Stine, Salem; Secretary, S. W. Snyder, Center Point; Treasurer, C. H. True, Edgewood.

Iowa State Poultry Association—President, George S. Phillips, Des Moines; First Vice-President, E. E. Richards, Cedar Rapids; Secretary, Harry Atkins, Davenport; Treasurer, A. T. Chamberlain, Des Moines.

COUNTY AND DISTRICT AGRICULTURAL SOCIETIES AND FAIR ASSOCIATIONS IN IOWA.

Adams—Adams County Agricultural Society, Corning; President, H. F. Hull, Corning; Secretary, M. F. Schafroth, Corning.

Allamakee—Allamakee County Agricultural Society, Waukon; President, B. O. Swebakken, Waukon; Secretary, Geo. S. Hall, Waukon.

Audubon—Audubon County Agricultural Society, Audubon; President, J. H. Maharg, Audubon; Secretary, H. A. Northup, Audubon.

Benton—Benton County Agricultural Society, Vinton; President, W. S. Bassett, Vinton; Secretary, Sol White, Vinton.

Black Hawk—The Dairy Cattle Congress, Waterloo; President, John Andrews, Waterloo; Secretary, H. E. Kiester, Waterloo.

Boone—Boone Agricultural Society, Ogden; President, A. B. Morgan, Ogden; Secretary, W. C. Treloar, Ogden.

Boone—Boone Driving Park & Fair Ass'n., Boone; President, A. M. Burnside, Boone; Secretary, John S. Crooks, Boone.

Bremer—Bremer County Fair Association, Waverly; President, E. M. Reeves, Waverly; Secretary, J. Q. Lauer, Waverly.

Buchanan—Buchanan County Fair Association, Independence; President, R. G. Swan, Independence; Secretary, J. S. Bassett, Independence.

Buena Vista—Buena Vista County Agricultural Society, Alta; President, David Burns, Alta; Secretary, W. J. Sievers, Alta.

Butler—Butler County Agricultural & Horticultural Society, Allison; President, Frank Fishel, Allison; Secretary, O. F. Missman, Allison.

Calhoun—Calhoun County Fair Ass'n., Manson; President, J. C. Hoag, Manson; Secretary, C. G. Kaskey, Manson.

Calhoun—Rockwell City Fair Association, Rockwell City; President, Andrew Stewart, Rockwell City; Secretary, W. Q. Stewart, Rockwell City.

Carroll—Carroll County Fair & Driving Park Association, Carroll; President, A. Kessler, Carroll; Secretary, Peter Stephany, Carroll.

Cass—Cass County Agricultural Society, Atlantic; President, C. Prall, Atlantic; Secretary, John J. Curry, Atlantic.

Cass—Massena District Fair Association, Massena; President, S. D. Wyckoff, Massena; Secretary, D. P. Hogan, Massena.

Cedar—The Cedar County Fair Association, Tipton; President, Scott Hamilton, Stanwood; Secretary, C. F. Simmermaker, Tipton.

Cerro Gordo—North Iowa Fair, Mason City; President, Chas. H. Hamstreet, Clear Lake; Secretary, Chas. H. Barber, Mason City.

Chickasaw—Chickasaw County Fair, New Hampton; President, P. H. Brannon, New Hampton; Secretary, F. D. Griffin, New Hampton.

Chickasaw—Big Four Fair Agricultural Society, Nashua; President, W. A. Granger, Nashua; Secretary, C. L. Putney, Nashua.

Clayton—Clayton County Agricultural Society, National; President, John Matt, St. Olaf; Secretary, Henry Luehsen, Granavillo.

Clayton—The Strawberry Point District Fair, Strawberry Point; President, H. A. Axtell, Strawberry Point; Secretary, R. W. Schug, Strawberry Point.

Clayton—Elkader Fair & Track Association, Elkader; President, E. C. Ehrhardt, Elkader; Secretary, Max B. Bishop, Elkader.

Clinton—Clinton County Agricultural Society, De Witt; President, G. W. Smith, De Witt; Secretary, G. H. Christensen, De Witt.

Crawford—Crawford County Agricultural Society, Arion; President, Wm. Eggers, Arion; Secretary, O. M. Criswell, Arion.

Davis—Davis County Agricultural Society, Bloomfield; President, E. D. Martin, Bloomfield; Secretary, H. C. Leach, Bloomfield.

Delaware—Delaware County Agricultural Society, Manchester; President, Thos. Noonan, Manchester; Secretary, J. G. Sabin, Manchester.

Dickinson—Dickinson County Agricultural Society, Spirit Lake; President, L. E. Francis, Spirit Lake; Secretary, A. M. Johnson, Jr., Spirit Lake.

Fayette—Fayette County Agricultural Society, West Union; President, J. S. Smith, West Union; Secretary, E. A. McIlree, West Union.

Franklin—Franklin County Agricultural Society, Hampton; President, F. Nancolaus, Hampton; Secretary, C. D. Williams, Hampton.

Greene—Greene County Fair Association, Jefferson; President, E. C. Freeman, Jefferson; Secretary, S. C. Culbertson, Jefferson.

Grundy—Grundy County Agricultural Society, Grundy Center; President, Robt. S. Plager, Grundy Center; Secretary, E. V. McBroom, Grundy Center.

Guthrie—Guthrie County Agricultural Society, Guthrie Center; President, B. F. Davidson, Menlo; Secretary, Wm. Edwards, Guthrie Center.

Hancock—Hancock County Agricultural Society, Britt; President, T. B. Erwin, Britt; Secretary, W. L. Bliss, Britt.

Hardin—Hardin County Agricultural Society, Eldora; President, J. H. Hadley; Secretary, Geo. W. Haynes, Eldora.

Harrison—Harrison County Agricultural Society, Missouri Valley; President, J. E. Jones, Missouri Valley; Secretary, A. B. Hosbrook, Missouri Valley.

Henry—Henry County Agricultural Association, Mt. Pleasant; President, John W. Palm, Mt. Pleasant; Secretary, C. H. Tribby, Mt. Pleasant.

Henry—Winfield Fair Association, Winfield; President, Chas. Larkin, Winfield; Secretary, John A. Baxter, Winfield.

Humboldt—Humbodlt County Agricultural Society, Humboldt; President, A. M. Adams, Humboldt; Secretary, O. H. De Groote, Humboldt.

Iowa—Iowa County Agricultural Society, Marengo; President, J. A. Waddell, Marengo; Secretary, F. H. Karsten, Marengo.

Iowa—Victor District Agricultural Society, Victor; President, Chas. Raffenspurger, Victor; Secretary, J. P. Bowling, Victor.

Iowa—Williamsburg Pavilion and Fair Association, Williamsburg; President H. E. Hull, Williamsburg; Secretary, Chas. Fletcher, Williamsburg.

Jackson—Jackson County Fair Association, Maquoketa; President, A. L. Broxam, Maquoketa; Secretary, W. D. McCaffrey, Maquoketa.

Jasper—Jasper County Agricultural Society, Newton; President, C. F. Saucerman, Newton; Secretary, F. E. Meredith, Newton.

Jefferson—Jefferson County Agricultural Society, Fairfield; President, Sanford Zeigler, Fairfield; Secretary, A. E. Labagh, Fairfield.

Johnson—Johnson County Agricultural Society, Iowa City; President, L. P. Kesler, Iowa City; Secretary, Geo. A. Hitchcock, Iowa City.

Jones—Jones County Agricultural Society, Monticello; President, E. G. Hicks, Monticello; Secretary, O. J. Bucklin, Monticello.

Jones—Anamosa Fair Association, Anamosa; President, W. D. Sheean, Anamosa; Secretary, L. W. Russell, Anamosa.

Keokuk—What Cheer District Fair Association, What Cheer; President, J. M. Stephenson, What Cheer; Secretary, Geo. A. Poff, What Cheer.

Kossuth—Kossuth County Agricultural Association, Algona; President, E. A. Walcott, Algona; Secretary, T. H. Wadsworth, Algona.

Lee—Lee County Fair and Agricultural Society, Donnellson; President, R. Klingler, Donnellson; Secretary, Chris Haffner, Donnellson.

Lee—West Point District Agricultural Society, West Point; President, John Shepard, West Point; Secretary, John Walljasper, West Point.

Linn—Wapsie Valley Fair Society, Central City; President, E. E. Henderson, Central City; Secretary, H. F. Lockwood, Central City.

Linn—Marion Interstate Fair, Marion; President, J. A. Cooper, Marion; Secretary, Gene Fagan, Marion.

Louisa—Columbus Junction District Fair Association, Columbus Junction; President, Wm. Sink, Columbus Junction; Secretary, D. N. Johnson, Columbus Junction.

Lyon—Lyon County Fair and Agricultural Society, Rock Rapids; President, W. S. Cooper, Rock Rapids; Secretary, A. S. Wold, Rock Rapids.

Mahaska—New Sharon District Agricultural Society, New Sharon;; President, Sidney Harper, New Sharon; Secretary, C. F. Momyer, New Sharon.

Marion—Lake Prairie District Agricultural Society, Pella; President, A. W. De Bruyn, Pella; Secretary, Chas. Porter, Pella.

Marshall—Eden District Agricultural Society, Rhodes; President, C. J. Buck, Rhodes; Secretary, H. M. Weeks, Rhodes.

Marshall—Marshall County Fair Association, Marshalltown; President, Warren Nichols, Minerva; Secretary, W. M. Clark, Marshalltown.

Mills—Mills County Agricultural Society, Malvern; President, Sherman Jones, Malvern; Secretary, I. J. Swain, Malvern.

Mitchell—Mitchell County Agricultural Society, Osage; President, Byron Leighton, Osage; Secretary, Carl H. Spaanum, Osage.

Monona—The Monona County Fair Association, Onawa; President, J. M. Hathaway, Turin; Secretary, I. A. Blotcky, Onawa.

Monroe—Monroe County Fair Association, Albia; President, Alf Timmins, Albia; Secretary, Loren Perrin, Ablia.

Muscatine—Union District Agricultural Society, West Liberty; President, C. P. Gibson, West Liberty; Secretary, W. H. Shipman, West Liberty.

Muscatine—Wilton Fair Association, Wilton Junction; President, C. C. Kaufman, Wilton Junction; Secretary, W. A. Cooling, Wilton Junction.

O'Brien—O'Brien County Agricultural Society, Sutherland; President, Chas. Youde, Sutherland; Secretary, E. J. Claussen, Sutherland.

O'Brien—Sheldon Fair Association, Sheldon; President, Fred J. Nelson, Sheldon; Secretary, Geo. Gardner, Sheldon.

Page—Clarinda Fair Association, Clarinda; President, E. G. Strong Clarinda; Secretary, J. C. Beckner, Clardina.

Page—Shenandoah Fair Association, Shenandoah; President, Chas. Aldrich, Shenandoah; Secretary, A. W. Goldberg, Shenandoah.

Pocahontas—Big Four District Fair Association, Fonda; President C. C. Patty, Fonda; Secretary, E. A. Elliott, Fonda.

Pottawattamie—Pettawattamie County Fair Association, Avoca; President, D. Gross, Avoca, Secretary, Caleb Smith, Avoca.

Poweshiek—Poweshiek County Central Agricultural Society, Malcom President, Wm. McClure, Malcom; Secretary, James Nowak, Malcom.

Poweshiek—Poweshiek County Central Agricultural Society, Grinnell; President, J. A. Baugham, Grinnell; Secretary, I. S. Bailey, Jr., Grinnell.

Sac—Sac County Fair Association, Sac City; President, Theo. Huser, Sac City; Secretary, Gus Strohmeier, Sac City.

Shelby—Shelby County Agricultural Society, Harlan; President, Jos. F. Beh, Harlan; Secretary, W. G. Kraschel, Harlan.

Sioux—Sioux County Agricultural Society, Orange City; President, Jno. J. De Vries, Orange City; Secretary, H. Slikkerveer, Orange City.

Story—Central Iowa Fair Association, Ames; President, C. L. Siverly, Ames; Secretary, E. H. Graves, Ames.

Tama—Tama County Fair Association; Toledo; President, W. N. Townsend, Traer; Secretary, A. G. Smith, Toledo.

Taylor—Taylor County Fair Society, Bedford; President, John J. Clark, Bedford; Secretary, C. N. Nelson, Bedford.

Van Buren—Milton District Agricultural Society, Milton; President, H. C. Power, Milton; Secretary, D. A. Miller, Milton.

Wapello—Eldon Big Four District Agricultural Society, Eldon. President, D. A. Jay, Eldon; Secretary, Secretary, H. R. Baker, Eldon.

Warren—Warren County Agricultural Society, Indianola; President, J. E. Houghtaling, Indianola; Secretary, Joe McCoy, Indianola.

Wayne—Clio Street Fair Association, Clio; President, E. E. Cass, Clio; Secretary, E. E. Bettis, Clio.

Wayne—Sewal Fair Association, Sewal; President, Everett Shriver, Sewal; Secretary, Loren Johnson, Sewal.

Webster—Webster County Fair Association, Fort Dodge; President, J. I. Rutledge, Ft. Dodge; Secretary, Wm. H. Black, Ft. Dodge.

Winnebago—Forest City Park & Fair Association, Forest City; President, F. J. Brooker, Thompson, R. F. D.; Secretary, M. M. Thompson, Forest City.

Winneshiek—Winneshiek County Agricultural Society, Decorah; President, G. F. Baker, Decorah; Secretary, L. M. Enger, Decorah.

Woodbury—Moville Stock Show, Moville; President, W. W. McElrath, Moville; Secretary, R. J. Anderson, Moville.

Woodbury—Interstate Live Stock Fair, Sioux City; President, F. L. Eaton, Sioux City; Secretary, Joe Morton, Sioux City.

Worth—Worth County Agricultural Society, Northwood; President, John M. Slosson, Northwood; Secretary, T. O. Groe, Northwood.

Wright—Wright County Agricultural Society, Clarion; President, F. P. Wilson, Clarion; Secretary, O. W. Whaley, Clarion.

FARMERS' COUNTY INSTITUTES AND SHORT COURSES IN IOWA.

Adair—President, Geo. Musmaker, Greenfield; Secretary, Adaline Brooks, Greenfield.

Adair—President, D. J. Cowden, Adair; Secretary, J. E. Turner, Anita.

Allamakee—President, Chas. L. Child, Waukon; Secretary, E. A. Allanson, Waukon.

Appanoose—President, A. V. McIntire, Moravia; Secretary, C. E. Nieukirk, Moravia.

Appanoose—President, E. M. Bishop, Centerville; Secretary, J. N. Willett, Centerville.

Appanoose—President, Craig Daniels, Moulton; Secretary, S. L. Moore, Moulton.

Benton—President, A. J. Koch, Keystone; Secretary, J. H. Rozema, Keystone.

Benton—President, T. H. Weil, Blairstown; Secretary, H. J. Grunewald, Blairstown.

Benton—President, J. E. McMillan, Vinton; Secretary, S. H. Catlin, Vinton.

Black Hawk—President, W. D. Strayer, Waterloo; Secretary, John W. Dack, Waterloo.

Boone—President, Sam Sundberg, Madrid; Secretary, C. H. Reckseen, Madrid.

Boone—President, F. A. Hall, Boxholm; Secretary, M. J. Lundvall, Boxholm.

Bremer—President, E. M. Reeves, Waverly; Secretary, J. Q. Lauer, Waverly.

Buchanan—President, A. J. Soules, Independence; Secretary, John Orr, Rowley.

Buena Vista—President, W. E. Gaffey, Storm Lake; Secretary, T. M. Renshaw, Storm Lake.

Buena Vista—President, Geo. M. Mills, Newell; Secretary, Wm. Huxtable, Newell.

Buena Vista—President, Algi D. Odoe, Rembrandt; Secretary, Conrad J. Peterson, Rembrandt.

Butler—President, L. Lucas, Greene; Secretary, M. McEnery, Greene.

Calhoun—President, Geo. A. Ridge, Richards; Secretary, A. W. Eshbaugh, Rockwell City.

Carroll—President, C. E. Ranworth, Glidden; Secretary, J. F. Snyder, Glidden.

Cass—President, John E. Bailey, Atlantic; Secretary, Roy Fancolly, Atlantic.

Cedar—President, Peter White, Massillon; Secretary, Aug. Ruprecht, Massillon.

Cedar—President, Carlos Fawcett, Springdale; Secretary, Irwin Erb, West Liberty.

Cerro Gordo—President, J. H. Carr, Swaledale; Secretary, R. A. Holman, Rockwell.

Cherokee—President, C. C. R. Bush, Washta; Secretary, Chas. Kissinger, Washta.

Cherokee—President, J. H. Amendt, Cherokee; Secretary, Charles Erickson, Meriden.

Chickasaw—President, C. F. Kepple, Nashua; Secretary, F. E. Tracey, Nashua.

Clay—President, Henry Johnson, Royal; Secretary, Chas. L. Christenson, Peterson.

Clayton—President, J. J. Kuehl, Elkader; Secretary, A. J. Carpenter, Elkader.

Clayton—President, Anton Funk, Edgewood; Secretary, Fred Sherman, Edgewood.

Clinton—President, D. L. Pascal, Dewitt; Secretary, John Olson, Calamus.

Crawford—President, Jas. T. Byrnes, Denison; Secretary, W. C. Rollins, Denison.

Dallas—President, Geo. M. Fox, Dallas Center; Secretary, Frank L. Loring, Dallas Center.

Dallas—President, Geo. M. Fox, Dallas Center; Secretary, Frank Orton, Adel.

Davis—President, C. E. Young, Bloomfield; Secretary, W. W. White, Pulaski.

Decatur—President, W. A. Hopkins, Lamoni; Secretary, E. D. Moore, Lamoni.

Decatur—President, A. E. Cotterill, Leon; Secretary, L. A. Durell, Leon.

Delaware—President, F. H. Munson, Manchester; Secretary, J. F. Merry, Manchester.

Des Moines—President, Willis S. Mathews, Danville; Secretary, S. H. Sater, Danville.

Dickinson—President, W. A. Brunemier, Lake Park; Secretary, C. H. Arthur, Spirit Lake.

Dubuque—President, Joseph H. Dehner, Cascade; Secretary, W. A. Fairburn, Cascade.

Emmet—President, Geo. H. Robb, Estherville; Secretary, John F. Utz, Estherville.

Fayette—President, Alfred Hanson, Oelwein; Secretary, C. H. Benson, Oelwein.

Fayette—President, O. M. Smith, Arlington; Secretary, Harrie W. Gleim, Arlington.

Floyd—President, Arthur Allen, Rockford; Secretary, Fred Cerwinske, Rockford.

Fremont—President, Wayne W. Polk, Sidney; Secretary, H. J. Ross, Farragut.

Grundy—President, L. H. McGrew, Reinbeck; Secretary, Jay Terrall, Reinbeck.

Guthrie—President, E. E. Kellogg, Panora; Secretary, D. G. Wilson, Panora.

Hamilton—President, J. C. Ritchie, Stratford; Secretary, H. H. Waller, Stratford.

Hamilton—President, L. N. Mason, Webster City; Secretary, J. F. Webb, Webster City.

Hamilton—President, J. H. Eslick, Lehigh; Secretary, J. B. Harrison, Stratford.

Hancock—President, Fred Zuehl, Britt; Secretary, Thos. Peterson, Britt.

Hardin—President, J. M. Hunt, Ackley; Secretary, Rieko Snater, Ackley.

Harrison—President, F. F. Beebee, Beebeetown; Secretary, Mrs. W. Allen Jones, Missouri Valley.

Henry—President, G. W. Bird, Mt. Pleasant; Secretary, A. S. Loveland, Mt. Pleasant.

Howard—President, J. J. Driscoll, Cresco; Secretary, C. C. Nichols, Cresco.

Iowa—President, J. H. Burgy, South Amana; Secretary, U. S. Butler, Williamsburg.

Jackson—President, George W. Blake, Maquoketa; Secretary, L. L. Littlefield, Bellevue.

Jasper—President, W. A. Johnson, Prairie City; Secretary, J. A. Ray, Prairie City.

Jefferson—President, W. A. Hook, Packwood; Secretary, B. D. Coleson, Fairfield.

Johnson—President, Robt. McCollister, Iowa City; Secretary, R. P. Adams, Solon.

Keokuk—President, Frank S. Yerger, Sigourney; Secretary, W. E. Utterback, Sigourney.

Kossuth—President, N. W. Griffith, Swea City; Secretary, M. O. Thompson, Swea City.

Lee—President, Joseph Carver, Farmington; Secretary, E. C. Lynn, Donnellson.

Linn—President, J. W. Penn, Waubeek; Secretary, Howard Lockwood, Central City.

Linn—President, T. W. Moody, Walker; Secretary, A. L. Palmer, Walker.

Louisa—President, Wm. Rogers, Wapello; Secretary, A. E. Whisler, Wapello.

Lucas—President, J. C. Williamson, Chariton; Secretary, H. C. Dillman, Oakley.

Lucas—President, J. L. Washburn, Derby; Secretary, De Witt White, Derby.

Lyon—President, F. B. Hanson, Inwood; Secretary, Raymond B. Brown, Inwood.

Madison—President, W. D. Patterson, Winterset; Secretary, S. A. Hays, Winterset.

Mahaska—President, Will Campbell, Oskaloosa; Secretary, Hassal A. Hedge, Oskaloosa.

Marion—President, M. Shivers, Knoxville; Secretary, N. F. Miller, Knoxville.

Marshall—President, C. E. Arney, Albion; Secretary, A. O. Wiley, Albion.

Marshall—President, Merritt Greene, Jr., Marshalltown; Secretary, M. A. Houser, Albion.

Mills—President, J. C. Slothower, Hastings; Secretary, Ralph Robbins, Hastings.

Mitchell—President, T. H. Hume, St. Ansgar; Secretary, M. E. Benson, St. Ansgar.

Monona—President, C. M. Perrin, Mapleton; Secretary, W. O. Fischer, Castana.

Montgomery—President, S. E. Smith, Grant; Secretary, L. Hardin, Grant.

Montgomery—President, J. A. Olander, Stanton; Secretary, E. M. Coppage, Stanton.

Muscatine—President, B. W. Barnes, West Liberty; Secretary, E. C. Nienaber, Wilton Junction.

O'Brien—President, H. G. Culp, Paullina; Secretary, Wilton A. Peek, Paullina.

Page—President, Herman Morsmen, Clarinda; Secretary, D. D. Stitt, Yorktown.

Palo Alto—President, Chas. Duhigg, Emmetsburg; Secretary, Margaret Ryan, Emmetsburg.

Palo Alto—President, R. E. King, Emmetsburg; Secretary, George C. Smith, Osgood.

Pocahontas—President, Joseph Vial, Ware; Secretary, W. A. Elliot, Pocahontas.

Pocahontas—President, Kenneth Squires, Rolfe; Secretary, James Bruce, Rolfe.

Polk—President, F. E. Proudfit, Altoona; Secretary, Ora Iseminger, Altoona.

Polk—President, C. R. Bishop, Altoona; Secretary, Geo. M. Grinstead, Mitchellville.

Polk—President, B. T. Haulman, Ankeny; Secretary, Ellis Randolph, Ankeny.

Poweshiek—President, W. N. Morgan, Guernsey; Secretary, Fred Malcolm, Deep River.

Ringgold—President, Elmer E. Norris, Diagonal; Secretary, Grant Stahl, Diagonal.

Scott—President, Jacob Henricksen, Donahue; Secretary, Chris. Grell, Dixon.

Scott—President, Adolph P. Arp, Eldridge; Secretary, Rudolph Koch, Eldridge.

Scott—President, Emil Kroeger, Princeton; Secretary, J. W. Du Bois, Princeton.

Shelby—President, Leonard C. Paup, Harlan; Secretary, J. C. Gingery, Harlan.

Sioux—President, G. J. Shoemaker, Hawarden; Secretary, G. L. Venard, Hawarden.

Story—President, S. J. Nelson, Roland; Secretary, H. E. Evenson, Roland.

Story—President, J. H. Cleverley, Maxwell; Secretary, W. J. Hartung, Maxwell.

Tama—President, Sherd Wilson, Traer; Secretary, R. G. Stoakes, Traer.

Taylor—President, F. E. Wakeman, Bedford; Secretary, D. C. Mohler, Bedford.

Union—President, A. J. Leninger, Afton; Secretary, L. J. Nickle, Afton.

Van Buren—President, Geo. V. Leffler, Stockport; Secretary, A. G. Roberts, Bonaparte.

Wapello—President, Chas. F. Mast, Ottumwa; Secretary, Madison Warder, Agency.

Wapello—President, W. B. Morrison, Eldon; Secretary, F. M. Manro, Eldon.

Warren—President, J. F. Henry, Indianola; Secretary, Silas Igo, Indianola.

Wayne—President, J. C. Snodgrass, Allerton; Secretary, R. C. Yohe, Allerton.

Webster—President, Aaron Peterson, Lanyon; Secretary, Van Gabrielson, Harcourt.

Winnebago—President, Geo. Andrews, Buffalo Center; Secretary, W. H. Annett, Buffalo Center.

Winnebago—President, L. T. Thompson, Leland; Secretary, Geo. Lundberg, Forest City.

Winneshiek—President, J. H. McMillen, Mabel, Minn., R. No. 3; Secretary, O. L. Street, Hesper.

Woodbury—President, W. W. Wilkins, Bronson; Secretary, H. H. Onstat, Bronson.

Worth—President, E. H. Miller, Northwood; Secretary, L. G. Mellem, Northwood.

Wright—President, Miller Nelson, Goldfield; Secretary, Roger Paine, Eagle Grove.

PART XVI.

Laws Relating to the Iowa Department of Agriculture

The laws creating and defining the work of the Iowa Department of Agriculture, the law with reference to the collection of crop statistics for publication in the Iowa Year Book of Agriculture, the law regulating the sale, transfer and use for public service of stallions and jacks, and those with reference to state aid to Short Courses, Farmers' Institutes and the Iowa State Fair are herewith presented. These are the laws with which the Iowa Department of Agriculture has most particularly to deal.

CHAPTER 3.

DEPARTMENT OF AGRICULTURE, AGRICULTURAL AND HORTICULTURAL SOCIETIES AND STOCKBREEDERS' ASSOCIATIONS AND STATE DAIRY ASSOCIATIONS.

Section **1653. Meeting of state agricultural society—repealed.** [28 G. A., ch. 58, § 18.]

[See sec. 1657-a.]

Sec. **1654. Officers—terms—repealed.** [28 G. A., ch. 58, § 18.]

[See sec. 1657-a.]

Sec. **1655. Premium list—repealed.** [28 G. A., ch. 58, § 18.]

[See sec. 1657-a.]

Sec. **1656. Annual report—repealed.** [28 G. A., ch. 58, § 18.]

[See sec. 1657-a.]

Sec. **1657. Distribution of reports—repealed.** [28 G. A., ch. 58, § 18.]

[See sec. 1657-a.]

Sec. **1657-a. Repeal.** That section sixteen hundred fifty-three, sixteen hundred fifty-four, sixteen hundred fifty-five, sixteen hundred fifty-six, sixteen hundred fifty-seven, sixteen hundred seventy-four, sixteen hundred eighty-two and sixteen hundred eighty-three of the code, and chapter forty-two of the acts of the twenty-seventh general assembly, be and the same are hereby repealed. [28 G. A., ch. 58, § 18.]

Sec. **1657-b. Department of agriculture—what embraced therein.** For the promotion of agriculture, horticulture, forestry, animal industry, manufactures, and the domestic arts, there is hereby established a department to be known as the department of agriculture, which shall embrace the district and county agricultural societies organized or to be organized under existing statutes and entitled to receive aid from the state, the state weather and crop service, and the offices of the dairy commissioner and state veterinarian. [28 G. A., ch. 58, § 1.]

Sec. **1657-c. State Board of agriculture—ex-officio members—other members—how chosen.** The department shall be managed by a board, to be styled the state board of agriculture, of which the governor of the state, the president of the state college of agriculture and mechanic arts, the state dairy commissioner, and the state veterinarian shall be members *ex officio*. The other members of the board shall consist of a president, vice president, secretary, treasurer and one director from each congressional district, to be chosen as hereinafter provided. [28 G. A., ch. 58, § 2.]

Sec. **1657-d. Agricultural convention—delegates to.** There shall be held at the capitol on the second Wednesday of December, nineteen hundred, and annually thereafter, a state agricultural convention, composed of the state board of agriculture, together with the president or secretary of each county or district society entitled to receive aid from the state, or a regularly elected delegate therefrom accredited in writing, who shall be a resident of the county; and in counties where there are no agricultural societies the board of supervisors may appoint a delegate who shall be a resident of the county. The president of an accredited representative of the following named associations shall be entitled to membership in the said convention, to wit: the state horticultural society, the state dairy association, the improved stock breeders' association, the swine breeders' association, and each farmers' institute organized under the provisions of section sixteen hundred seventy-five of the code. Provided, said farmers' institute has been organized at least one year, and has reported to the state secretary of agriculture, not later than November first, through its president and secretary or executive committee, that an institute was held according to law, the date thereof, the names and post-office address of its officers. They shall also furnish the state secretary of agriculture with a copy of program of each institute hereafter held and one or more papers read before such institute, if papers are read. On all questions arising for determination by the convention including the election of members of the board, each member present shall be entitled to but one vote, and no proxies shall be recognized by the convention. [31 G. A., ch. 66; 29 G. A., ch. 165, § 1; 28 G. A. ch. 58, § 3.]

Sec. **1657-e. Officers—directors—vacancies.** At the convention held on the second Wednesday in December, nineteen hundred, there shall be elected a president and vice president for the term of one year; also one director of the board of agriculture from each congressional district; those from even-numbered districts to serve two years and those from odd-numbered districts one year. At subsequent annual conventions, vacancies in the list of district directors shall be filled for two years. But vacancies occurring from death or other causes, shall be filled for the unexpired term; and the board may fill any vacancy in office until the next annual convention. [28 G. A., ch. 58, § 4.]

Sec. **1657-f. State farmers' institute.** In connection with the annual convention, either preceding or following the day on which the officers are elected, the board may hold a state farmers' institute, for the discussion of practical and scientific topics relating to the various branches of agriculture, the substance of which shall be published in the annual report of the board. [28 G. A., ch. 58, § 5.]

Sec. **1657-g. Duties of board.** The board shall have general supervision of the several branches, bureaus and offices embraced in the department of agriculture; and it shall be the duty of the board to look after and promote the interests of agriculture, of agriculture education and animal and other industries throughout the state; to investigate all subjects relating to the improvement of methods, appliances and machinery, and the diverisfication of crops and products; also to investigate reports of the prevalence of contagious diseases among domestic animals, or destructive insects and fungus diseases in grains and grasses and other plants, the adulteration of foods, seeds and other products, and to report the result of investigation, together with recommendations of remedial measures for prevention of damage resulting therefrom. It shall be the duty of the Iowa agricultural experiment station to cooperate with the department of agriculture in carrying on these investigations. [28 G. A., ch. 58, § 6.]

Sec. **1657-h. Executive committee.** The president, vice president, and secretary shall constitute an executive committee, which shall transact such business as may be delegated to it by the board of agriculture. The president may call meetings of the board when the interests of the department require it. [28 G. A., ch. 58, § 7.]

Sec. **1657-i. State fair.** The board shall have full control of the state fair grounds and improvements thereon belonging to the state, with requisite powers to hold annual fairs and exhibits of the productive resources and industries of the state. They may prescribe all necessary rules and regulations thereon. The board may delegate the management of the state fair to the executive committee and two or more additional members of the board; and for special work pertaining to the fair they may employ an assistant secretary and such clerical assistance as may be deemed necessary. All expenditures connected with the fair, including the per diem and expenses of the managers thereof, shall be recorded sperately and paid from the state fair receipts. The said board of agriculture shall have the power to authorize or forbid the construction of street railways within the state fair grounds and may define the motive power by which the cars thereon shall be propelled and to authorize or forbid the location and laying down of tracks for street railways in said grounds. [29 G. A., ch. 166, § 1; 28 G. A., ch. 58, § 8.]

Sec. **1657-j. Bequests—duties of officers regarding.** The department of agriculture is hereby authorized to take and hold property, real and personal, derived by gifts and bequests, and the president, secretary and treasurer shall have charge and control of the same, subject to the action of the board, and shall give bonds as required in case of executors, to be approved by the board of agriculture and filed with the secretary of state. [28 G. A., ch. 58, § 9.]

Sec. **1657-k. Secretary—duties—Iowa year book of agriculture.** The board shall elect a secretary for a term of one year, whose duties shall be such as usually pertain to the office of a secretary, under the direction of the board. He shall keep a complete record of the proceedings of the annual state agricultural convention and all meetings of the board; he shall draw all warrants on the treasurer and keep a correct account thereof; he shall compile and superintend the printing of the annual report of the state department of agriculture, which shall be entitled "The Iowa Year Book of Agriculture," and shall include the annual report of the dairy commissioner, the state dairy association, and the Iowa agricultural experiment station, the annual report of the state veterinarian, the Iowa weather and crop service, the Iowa improved stock breeders' association, or such part thereof as the executive committee may approve, and such other reports and statistics as the board may direct, which shall be published by the state; he shall perform such other duties as the board may direct. [28 G. A., ch. 58, § 10.]

Sec. **1657-l. Distribution of year book—competitive bids.** The Iowa year book of agriculture shall be printed and bound in cloth and such number as the executive council shall direct, to be distributed as follows: One copy to each state officer and member of the general assembly; ten copies to the state library and ten copies to the libraries of the state university and the state college of agriculture and mechanic arts; one copy to each library in the state open to the general public; one copy to the president and secretary of each county and district agricultural society, and one copy to the board of supervisors of each county in which there is no such agricultural society, and the balance as may be directed by the board of agriculture. The executive council shall receive competitive bids for the printing and binding of the year book and let the contract to the lowest responsible bidder. Such bidding, however, shall be confined to concerns in Iowa and to persons or corporations paying the union scale of wages. [28 G. A., ch. 58, § 11.]

Sec. **1657-m. Present officers and directors.** The present officers and directors of the state agricultural society, upon taking effect of this act, shall be, and they are hereby made and constituted officers and directors of the department of agriculture, who, with the ex-officio members named in section two hereof, shall have full control and management of the department of agriculture until the members of the state board of agriculture are elected as provided in section three of this act. [28 G. A., ch. 58, § 12.]

Sec. **1657-n. Office—supplies—salary of secretary and assistant.** The office of the department of agriculture shall be in rooms numbers eleven and twelve, in the capitol building; the said office shall be entitled to such supplies, stationery, postage and express as may be required, which shall be furnished by the executive council in the same manner as other officers are supplied. The secretary shall receive as salary such compensation as may be fixed and allowed by the state board of agriculture from the funds derived from the state fair, but said salary shall not be increased more than four hundred dollars in any one year, and, in no event, be more than thirty-five hundred dollars. [35 G. A., ch. 111, § 1.] [31 G. A., ch. 6.] [28 G. A., ch. 58, § 13.]

Sec. **1657-o. Treasurer—duties—bond—compensation.** The board shall elect a treasurer for a term of one year, whose duties shall be to keep a correct account of the receipts and disbursements of all moneys belonging to the department of agriculture, and shall make payments only on warrants signed by the president and secretary thereof, except in payment of premiums. He shall execute a bond for the faithful performances of his duty, to be approved by the board and filed with the secretary, and shall receive such compensation for his services as shall be fixed by the board, not exceeding one hundred dollars per annum. [28 G. A., ch. 58, § 14.]

Sec. **1657-p. Elective members—compensation.** The elective members of the state board of agriculture, for attending the meetings of the board, and for the special work pertaining to the holding of the state fair shall be allowed four dollars per day and five cents per mile in going and returning from the place where the business is transacted, the claim for which shall in all cases be verified and paid as provided in section eight. [28 G. A., ch. 58, § 15.]

Sec. **1657-q. Financial report—made by state accountant—publication.** That the law as it appears in section sixteen hundred fifty-seven-q of the supplement to the code, 1907, be and the same is hereby repealed and the following enacted in lieu thereof:

"Prior to the annual convention of the department of agriculture, the state accountant, provided for in section one hundred sixey-one-a of the supplement to the code, 1907, shall examine and report upon all financial business of the department of agriculture, said report to be made to the executive council. Such report shall be edited under the direction of the executive council and be published in accordance with the provisions of section one hundred sixty-three of the code and acts amendatory thereof." [33 G. A., ch. 107, § 1.] [28 G. A., ch. 58, § 16.]

Sec. **1657-r. Premium list and rules.** The premium list and rules of exhibition shall be determined and published by the board prior to the first day of April in each year. [28 G. A., ch. 58, § 17.]

Sec. **1657-s. Certain terms construed.** That where the words "board of directors of the state agricultural society" occur in the code or the acts amendatory thereto, the same shall be construed to mean and to refer to the state board of agriculture; and he words "state society" and "state agricultural society" shall be construed to mean and refer to the department of agriculture. [28 G. A., ch. 58, § 20.]

Sec. **1657-t. Appropriations.** There is hereby appropriated annually from and after the first day of January nineteen hundred and one for the support of the office of the department of agriculture, twenty-four hundred dollars, and for insurance and improvements of buildings on the state fair grounds the sum of ten hundred dollars or so much thereof as shall be necessary, and the auditor of state shall draw a warrant therefor upon the order of the department of agriculture signed by the president and secretary thereof, in such sums and at such times as the board shall deem necessary. The state shall not be liable for the payment of any premiums offered by the state board of agriculture, nor for any expenses or liabilities incurred by said board, except, as expressly provided for in this act. [28 G. A., ch. 58, § 21.]

Sec. **1658. County societies—premiums.** County and district agricultural societies may annually offer and award premiums for the improvement of stock, tillage, crops, implements, mechanical fabrics, articles of domestic industry, and such other articles and improvements as they may think proper, and so regulate the amount thereof and the different grades as to induce general competition. [28 G. A., ch. 59, § 2; C. '73, § 1109; R. § 1697.]

Under the statutory provision authorizing agricultural societies to award premiums, etc., such society has power to authorize trials of speed on its grounds and such lawful games or amusements as its officers and directors may in their discretion see fit to arrange for in furnishing amusement and entertainment as well as instruction to those attending. Therefore the directors of such society are not liable in their individual capacity for neglect to provide protection to spectators against dangers incident to the playing of such games as are authorized. *Williams v. Dean*, 134-216, 111 N. W. 931.

Sec. **1659. List of awards.** Each county district society shall annually publish a list of the awards, and an abstract of the treasurer's account, in one or more newspaper of the county, with a report of its proceedings during the year, and a synopsis of the awards. It shall also make a report of the condition of agriculture in the county to the board of directors of the state agricultural society, which shall be forwarded on or before the first day of November in each year to the secretary of said society. The auditor of state, before issuing a warrant in favor of such societies for any amount, shall demand the certificate of the secretary of the state society that such report has been made. Any society failing to report on or before the first day of November shall not receive state aid for that year. [28 G. A., ch. 59, § 2; C. '73, § 1110; R. §1698.]

Sec. **1660. Appropriation from county—levy of tax for—question submitted—notice—title in county—control.** When a county agricultural society shall have procured[1] in fee simple, free from incumbrance, land for fair grounds, not less than ten acres in extent, or hold and occupy such amount of land by virtue of a lease, and own and have thereon buildings and improvements worth at least two thousand dollars, the board of supervisors of the county may appropriate and pay to it a sum not exceeding one hundred dollars for every thousand inhabitants in the county, to be expended by it in fitting up or purchasing such fair grounds, but for no other purpose; but the agrregate amount so appropriated shall not exceed ten hundred dollars to any one society. The board of supervisors are further authorized to purchase real estate for county fair purposes, in sums not[2] exceeding ten hundred dollars, providing however, that the board of supervisors shall first have submitted to the legal voters of the county a proposition therefor, and voted for by a majority of all persons voting for and against such proposition at a general or special election; notice to be given as provided in section four hundred twenty-three of the supplement to the code. And the board of supervisors shall not exceed in the purchase of such real estate, the amount so voted for; the title of such real estate when purchased to be taken in the name of the county, and the board of supervisors shall place such real estate under the control and management of an incorporated county fair society, as long as an annual county fair is maintained by such corporation on said real estate. And said corporation is authorized to erect and maintain tain buildings and make such other improvements on said real estate as is necessary, but the county shall not be liable for such improvements, or the expenditures therefor. The right of such county fair society to the control and management of said real estate may be terminated by the board of supervisors whenever well conducted agricultural fairs are not annually held thereon. The board of supervisors of any county which has acquired real estate for county fair purposes and which has a county agricultural society using said real estate may submit, at any regular election, the question of aiding said agricultural society by a direct tax on all the property of the county, of not to exceed ten hundred dollars in any one year, for not to exceed ten years in succession; and if a majority of the votes cast on this proposition at such election are in favor of said tax, said board shall levy a tax for the benefit of said society, but such tax shall be expended only for the erection or repair of buildings or other permanent improvements on the fair grounds, or for the payment of debts contracted for the erection of such buildings or other permanent improvements. Shares of stock, nonassessable, shall be issued to the county at par value for amount of money received by said society from taxes raised under this act. [35 G. A., ch. 142, § 1.] [32 G. A., ch. 17, § 2; C. '73, § 1111.]

[[1]This word erroneously appeared as "produced" in the 1907 supplement. [2]The word "not" erroneously appeared here in the same supplement. The records have been carefully examined and the said word "not" is not in the enrolled bill H. F. No. 1, 32 G. A.—Editor.]

Sec. **1661. State aid to district or county society—repealed.** [28 G. A., ch. 59, § 1.]

[See sec. 1661-a.]

Sec. **1661-a. State aid to district or county society—failure to report.** That section sixteen hundred sixty-one of the code be and is hereby repealed and the following enacted in lieu thereof:

"Any county or district agricultural society, upon filing with the auditor of state affidavits of its president, secretary, and treasurer showing what sum has actually been paid out during the current year for premiums, not including races, or money paid to secure games or other amusements, and that no gambling devices or other violations of law were permitted, together with a certificate from the secretary of the state society showing that it has reported according to law, shall be entitled to receive from the state treasury a sum equal to forty per cent. of the amount so paid in premiums, up to five hundred dollars, and ten per cent. additional of the amount paid in premiums over five hundred dollars; but in no case shall the amount paid to any society exceed the sum of three hundred dollars. When any society fails to report, according to law, on or before the first day of November, that society shall not receive a warrant from the state auditor for that year, but the secretary of the state board of agriculture shall notify the county auditor of the county in which the society is located of such failure, and the board of supervisors may appoint a delegate to the annual meeting of the state agriculture [agricultural] convention, said delegate to be a resident of said county. [33 G. A., ch. 108, § 1.] [28 G. A., ch. 59, § 1; 27 G. A., ch. § 43, § 1; C. '73, § 1112; R. § 1704.]

Sec. **1661-a1. Short course—organization of in counties—state aid for.** That section sixteen hundred and sixty-one-a and sixteen hundred seventy-five of the supplement to the code, 1907, be amended by adding thereto the following: Whenever one hundred citizens of any county in the state that does not have a county or district fair, receiving the state aid as above provided, or that in any year may not hold a county fair, shall organize what is known as a short course, with a president, secretary, treasurer and executive committee of not less than five members, and shall hold a session of four or more days at some place within the county and give a program, designated to promote the science of agriculture and domestic science, said short course organization upon filing with the auditor of state, by its president, secretary and treasurer, a statement showing what sums it has actually paid out in value for premiums during the period of the short course of that year, together with the certificate of the secretary of the state board of agriculture showing that it has reported according to law as provided in cases of county and district agricultural societies, shall be entitled to receive from the state treasurer a sum equal to forty per cent. of the amount paid in premiums, but in no case shall the amount so received in any county exceed two hundred dollars. The payment from the state treasury herein provided for shall be made by warrant of the state auditor as soon as due proof is made to him of the holding of said short course as herein provided; and there is hereby appropriated out of any money in the state treasury not otherwise appropriated, the sum necessary to pay the amount contemplated in this section. [33 G. A., ch. 109, § 1.]

Sec. **1661-a2. Farmers' institute fund—diversion to short course.** [In] all counties not holding a regular farmers' institute and where a short course is held, the money appropriated for such farmers' institute as provided in section sixteen hundred seventy-five of the supplement of the code, 1907, shall apply and be payable to said short course upon proof of such organization and such short course having been held, being filed with the state board of agriculture by the officers of said short course. [33 G. A., ch. 109, § 2.]

Sec. **1662. Report to supervisors.** Each society receiving such appropriation shall, through its secretary, make to the board of supervisors a detailed statement, accompanied with vouchers, showing the legal disbursement of all moneys so received. [C. '73, § 1113.]

Sec. **1663. Permits.** The president of a district or county agricultural society may grant a written permit to such persons as he thinks proper, to sell fruit, provisions, and other articles not prohibited by law, under such regulations as the board of directors may prescribe. [C. '73, § 1115.]

Sec. **1664. Police power.** The president of any such society may appoint such number of peace officers as may be necessary, and may arrest or cause to be arrested any person violating any of the provisions of this chapter, and cause him to be taken before some justice of the peace to be dealt with as provided by law; and he may seize or cause to be seized all intoxicating liquors, wine, or beer of any kind, with the vessels containing the same, and all tools or other implements used in any gambling, and remove or cause to be removed all shows, swings, booths, tents, carriages, vessels, boats, or any other thing that may obstruct or cause to be obstructed, by collecting persons around or otherwise, any thoroughfare leading to the inclosure in which such agricultural fair is being held. Any person owning, occupying or using any of such things causing such obstruction, who shall refuse or fail to remove the same when ordered to do so by the president, shall be liable to a fine of not less than five nor more than one hundred dollars for every such offense. During the time the fair is being held, no ordinance or resolution of any city or town shall in any way impair the authority of the society, but it shall have sole and exclusive control over and management thereof. [23 G. A., ch. 125; C. '73, § 1116.]

The society having no power to authorize the arrest of persons for any other offenses than selling intoxicating liquors, gambling and horse racing within its grounds an arrest by its officers and agents for any other offense, such as that of assault will not render the society liable: *Hern v. Iowa State Ag'l Society*, 91-97.

The society is an arm or agency of the state organized for the promotion of the public good and for the advancement of the agricultural interests of the state. Its funds should not be used to pay damages arising out of the commission of wrongful acts by its officers and servants who are in no way connected with the objects and purposes of its creation: *Ibid.*

Sec. **1665. Fraudulent entries of horses.** No person, partnership, company or corporation shall knowingly enter or cause to be entered any horse of any age or sex under an assumed name, or out of its proper class, to compete for any purse, prize, premium, stake or sweepstake offered or given by any agricultural or other society, association, person or persons in the state, or drive any such horse under an assumed name, or out of its proper class, where such prize, purse, premium, stake or sweepstake is to be decided by a contest of speed. [24 G. A., ch. 67, § 1.]

Sec. **1666. Penalty.** Any person convicted of a violation of the preceding section shall be imprisoned in the penitentiary for a period of not more than three years, or in the county jail for not more than one year, and be fined in a sum not exceeding one thousand dollars. [Same, § 2.]

Sec. **1667. Entry under changed name.** The name of any horse, for the purpose of entry for competition in any contest of speed, shall not be changed after having once contested for a prize, purse, premium, stake or sweepstake, except as provided by the code of printed rules of the society or association under which the contest is advertised to be conducted, unless the former name is given. [Same, § 3.]

Sec. **1668. Class determined.** The class to which a horse belongs for the purpose of an entry in any contest of speed, as provided by the printed rules of the society or association under which such contest is to be made, shall be determined by the public record of said horse in any such former contest. [Same, § 4.]

Sec. **1669. Horticultural society—meetings.** The horticultural society shall hold its meetings each year for the transaction of business at such time as it may fix, at which a president, vice-president, secretary, treasurer and librarian shall be elected, who shall serve one year; also one-half of a board of directors, the full board not to exceed twelve in number, who shall serve two years, but vacancies may be filled for the unexpired term. [23 G. A., ch. 44; C. '73, § 1117.]

Sec. **1670. District and county societies.** The society shall encourage the organization of district and county societies, giving them representation therein, and in every way further the fruit and tree growing interests of the state. [C. '73, § 1118.]

Sec. **1671. Annual report.** The secretary shall make an annual report to the governor, containing the proceedings of the society, with an itemized account showing all the expenditures and the purpose for which the same were made during the year, the general condition of horticultural interests throughout the state, together with such statements and recommendations as he may think useful, to be published by the state, under the supervision of the society, on or before the fifteenth day of February of each year. [25 G. A., ch. 85; C. '73, § 1119.]

Sec. **1672. Printing and distribution.** There shall be printed four thousand copies of the report, which shall be bound in muslin covers, uniform in style with the reports heretofore made, which shall be distributed by the secretary of state, as follows: Six copies each to the governor, lieutenant governor, secretary of state, auditor, treasurer, attorney-general, judges of the supreme court, and each member of the general assembly; one hundred to the agricultural college, five copies to the university, two to each incorporated college in the state, one to each auditor, and clerk of the district court, to be kept in his office, and one to each newspaper published in the state; the remainder to be distributed by direction of the society. [29 G. A., ch. 68, § 1; 18 G. A., ch. 6; C. '73, § 1120.]

Sec. **1673. Appropriation.** The sum of four thousand dollars is hereby appropriated annually for the use and benefit of said society, which shall be paid upon the warrant of the auditor of state, upon the order of the president of said society, in such sums and at such times as may be for the interests of said society. [29 G. A., ch. 68, § 3; 20 G. A., ch. 128; C. '73, § 1121.]

Sec. 1674. **Publication of proceedings of improved stock breeders' association—repealed.** [28 G. A., ch. 58, § 18.]

[See sec. 1657-a.]

Sec. 1675. **Farmers' institutes—state aid—appropriation—failure to report.** That the law as it appears in section sixteen hundred seventy-five of the supplement to the code, 1907, be and the same is hereby repealed and the following enacted in lieu thereof:

"When forty or more farmers of a county organize a farmers' institute, with a president, secretary, treasurer, and an executive committee of not less than three outside of such officers and hold an institute, remaining in session not less than two days in each year, which institute may be adjourned from time to time and from place to place in said county, the secretary of the state board of agriculture, upon the filing with him a report of such institute and an itemized statement under oath showing that the same has been organized and held and for what purposes the money expended has been used, shall certify the same to the auditor of state, which state auditor shall remit to the county treasurer of such county his warrant for the amount so expended not to exceed seventy-five dollars and there is hereby appropriated out of the moneys in the state treasury not otherwise appropriated, a sum not to exceed seventy-five dollars annually for such institute work in each county. No officer of any such farmers' institute shall receive directly or indirectly any compensation from said fund for said services as such officer. The report provided for in this section shall be filed with the secretary of the state board of agriculture on or before the first day of June of each year. When any institute fails to report on or before the first day of June, that institute shall not receive state aid for that year." [33 G. A., ch. 110, § 1; 33 G. A., ch. 109, §§ 1, 2.] [29 G. A., ch. 69, § 1; 24 G. A., ch. 58, § 1.]

[See sec. 1661-a1, especially the first clause thereof; also sec. 1661-a2, the same being secs. 1 and 2 of ch. 109, 33 G. A. It may have been intended that both of the sections named should be added to sec. 1675 as well as to sec. 1661-a, but as the intent is not clear it has been thought advisable to place the sections as they appear above. Attention is called to the fact that ch. 110, 33 G. A. was approved April 1, 1909, and ch. 109, 33 G. A., was approved April 5, 1909. Editor.]

Sec. 1676. **Appropriation.** The money appropriated and paid into the county treasury shall be designated as a farmers' institute fund, and no warrant shall be drawn thereon, except by an order signed by a majority of the members of the executive committee. In case two or more organizations shall claim recognition as farmers' institutes in any county, a bill shall be audited by the board of supervisors, who shall divide said state fund as nearly as possible equitably, but in no case shall more than three institutes be held in one year in any county under the provisions of this chapter. [Same, § 2.]

Sec. 1677. **Weather and crop service.** There is established, under the supervision of the board of directors of the state agricultural society, a weather and crop service, which shall cooperate with the national weather bureau for the purpose of collecting weather and crop statistics and meteorological data, and disseminating the weather forecasts and storm and frost warnings among the people, and to promote the growth of knowledge of meteorological science and the climatology of the state. [23 G. A., ch. 29, § 2.]

Sec. **1678. Director.** The central station shall be at the seat of government, under the charge of a director and assistant, to be appointed by the governor for a term of two years, upon the recommendation of the board of directors of the state agricultural society; the assistant to be an officer of the United States weather bureau, if one shall be detailed for that purpose. [Same, § 3.]

Sec. **1679. Stations—observers—bulletins—speakers and lecturers.** The director shall cooperate with the board of directors of the state agricultural society to establish volunteer stations at one or more places in each county in the state, and in appointing observers thereat; to supervise such stations, receive reports of meteorological events and crop conditions therefrom, and tabulate the same for permanent record; to issue weekly weather and crop bulletins during the season from April first to October first, and to edit and cause to be published at the office of the state printer a monthly weather and crop review, containing meteorological and agricultural matter of public interest and educational value. The state printer shall print three thousand copies thereof, which shall be distributed from the office of department of agriculture. The directors may require a larger issue for such subscribers as will pay the expense thereof. The director shall have advisory power to cooperate with the farmers' institute organizations of the several counties of the state, for the purpose of arranging dates and providing speakers or lecturers, with a view to economy of time and travel in attending institutes; such institutes to be held as nearly as practicable in circuits, and at such dates as will enable speakers to attend two or more such institutes each week. [28 G. A., ch. 58, § 19; 24 G. A., ch. 63, § 2; 23 G. A., ch. 29, § 4.]

Sec. **1680. Report.** The director shall compile and make an annual report to the governor, which shall contain a complete review and summary of the results of the service for the year, which may include articles and papers upon subjects of meteorological science and climatology, and extracts from approved works and publications on such subjects, which shall be printed and bound in such numbers as the executive council shall direct, the expenses to be paid as in case of other reports. [23 G. A., ch. 29, § 5.]

Sec. **1681. Appropriation.** There is hereby appropriated, out of any money in the state treasury not otherwise appropriated, the sum of twenty-seven hundred dollars annually, to be drawn and expended upon the order of the president and secretary of the department of agriculture, for such service, including the salary of the director, which shall not exceed fifteen hundred dollars per annum. [28 G. A., ch. 58, § 19; 24 G. A., ch. 63, § 1.]

Sec. **1682. Publication of proceedings of state dairy association—repealed.** [28 G. A., ch. 58, § 18.]

[See sec. 1657-a.]

Sec. **1683. Distribution—repealed.** [28 G. A., ch. 58, § 18.]

[See sec. 1657-a.]

Sec. **1683-a. Body corporate in each county—purposes.** For the purpose of improving and advancing the science and art of agriculture, animal husbandry and horticulture, a body corporate is hereby authorized in each county in the state. [35 G. A., ch. 140, § 1.]

Sec. **1683-b. How formed—articles filed.** Such body corporate may be formed by the acknowledging and filing for record with the county recorder of such county, of articles of incorporation by at least ten farmers, land owners, or other business men of each of the majority of the several townships of the county. [35 G. A., ch. 140, § 2.]

Sec. **1683-c. Articles—what included.** The articles of incorporation shall be as follows: "We, the undersigned farmers, land owners and business residents of..........county, Iowa, do hereby adopt the following articles of incorporation:

Article 1. The objects of this incorporation shall be to advance and improve, in.............county, Iowa, the science and art of agriculture, horticulture and animal husbandry.

Article 2. The name of this incorporation shall be The Farm Improvement Association of..............County, Iowa (inserting the name of the county of which the incorporators are residents).

Article 3. The affairs of this incorporation shall be conducted by a president, a vice president, a secretary and a treasurer, who shall perform the duties usually pertaining to such positions, and by a board of directors of nine members all of which officers and directors shall be elected by the members of said incorporation at an annual meeting on the first Monday of January of each year. Not more than two directors shall be residents of the same township, when elected. All officers and directors shall hold their positions for one year and until their successors are elected. We, the said incorporators, have elected the following provisional officers to hold their respective positions until their successors are elected at the annual meeting in the year.......:

President ....
Vice president ....
Secretary ....
Treasurer ....

Board of Directors:

1 ....
2 ....
3 ....
4 ....
5 ....
6 ....
7 ....
8 ....
9 ....

Article 4. The yearly dues of the members of this incorporation shall be one dollar, payable at the time of applying for membership and on the first Monday in January of each year thereafter. No member having once paid dues, shall forfeit his membership until his or her subsequent dues are six months in arrears.

Article 5. Any citizen of the county and any nonresident owning land in the county shall have the right to become a member of the incorporation by paying one year's dues and thereafter complying with the articles of incorporation and by-laws.

Article 6. This incorporation shall endure until terminated by operation of law. [35 G. A., ch. 140, § 3.]

Sec. **1683-d. Private property exempt—seal.** Such body corporate may sue and be sued, but the private property of the members shall be exempt from corporate debts. It may have a seal which it may alter at pleasure. [35 G. A., ch. 140, § 4.]

Sec. **1683-e. By-laws—may receive bequests—experts employed—general powers—dues—prizes.** Such body corporate may, in such manner as it may see fit, adopt by-laws; shall have power to take by gift, purchase, devise or bequest real and personal property for purposes appropriate to its creation; may employ one or more experts or advisors to advance and improve agriculture, horticulture and animal husbandry in said county, provided that the president of the Iowa state college of agriculture and mechanic arts certifies to the qualification and fitness of such person to give expert instructions or advice in said sciences. Such body corporate shall have and exercise all powers necessary, appropriate and convenient for the successful carrying out of the objects of said incorporation. The said association shall have authority to use part or all of the sum annually received as dues from its members in the payment of prizes offered in any department of its work, including agriculture fairs, short courses or farmers' institutes. [35 G. A., ch. 140, § 5.]

Sec. **1683-f. Articles recorded—no fee.** The articles of incorporation shall be recorded by the recorder of deeds without fee of any kind. [35 G. A., ch. 140, § 6.]

Sec. **1683-g. No compensation.** No salary or compensation of any kind shall be paid to the president, vice president, treasurer or to any director. [35 G. A., ch. 140, § 7.]

Sec. **1683-h. No dividends—diversion of funds or property.** No dividend shall ever be declared by this incorporation. Any diversion of the funds or property of such incorporation to any purpose except the purposes of incorporation shall constitute larceny and be punished accordingly. [35 G. A., ch. 140, § 8.]

Sec. **1683-i. Bond of treasurer—filed and recorded—minimum.** The treasurer shall give bond, the amount to be fixed by the board of directors in double the amount of money likely to come into his hands, with sureties. Said bond shall be filed with and approved by the county auditor and recorded without fee. In no case shall the bond of the treasurer be less than five thousand dollars. [35 G. A., ch. 140, § 9.]

Sec. **1683-j. Annual reports—records open to inspection.** The outgoing president and treasurer shall, on the first Monday of January of each year, file with the county auditor full and detailed reports under oath of all receipts and expenditures of said incorporation, showing from whom received and to whom paid and for what purpose. A duplicate of said report shall also be laid before the members at the annual meeting. The books, papers and records of said incorporation shall at all times be open to the inspection of the board of supervisors and to any one appointed by them to make examination. [35 G. A., ch. 140, § 10.]

Sec. **1683-k. Annual tax levy—submission of question.** Whenever the articles of incorporation are filed as herein provided and the president and secretary certifies to the board of supervisors that the incorporation of said association has been effected, the said board shall at the next regular election in said county submit to the voters of said county the question whether a yearly tax of not to exceed five thousand dollars shall be thereafter levied for the purpose of improving and advancing the science and art of agriculture, animal husbandry and horticulture. Said question shall be submitted on a separate ballot and substantially in the following form:

"Shall a yearly tax of not to exceed five thousand dollars be hereafter levied for the purpose of improving and advancing the science and art of agriculture, animal husbandry and horticulture."	☐ Yes ☐ No

The voter shall signify his vote on said proposition by placing a cross in the square opposite the word "yes" or "no." [35 G. A., ch. 140, § 11.]

Sec. **1683-l. Vote—how canvassed—board of supervisors to order levy—reimbursement of funds advanced.** The vote on said proposition shall be canvassed and returns made thereof as in other cases and if a majority of the votes are in favor of said proposition the board of supervisors shall, prior to the first day of January following said election, set aside, out of the general county fund, the sum of five thousand dollars, less any sum advanced to said association by the government of the United States in aid of its objects. Said sum so set aside shall be paid to the treasurer of said association, who shall be liable on his bond for the proper distribution thereof. If a majority of the votes be in favor of said proposition, the board of supervisors shall annually thereafter, and at the time of levying taxes generally, levy on all the property of the county a tax of five thousand dollars, less any amount advanced to said association, by the government of the United States in aid of its objects and at the first general levy of taxes following the advance of funds herein provided, levy an additional tax sufficient to reimburse said county for the funds so advanced. [35 G. A., ch. 140, § 12.]

Sec. **1683-m. Funds—how expended.** The treasurer of said incorporation shall receive all funds belonging to said incorporation and all taxes collected as herein provided and shall pay out the same only on bills allowed by the board of directors, such allowance to be certified to by the president or secretary. [35 G. A., ch. 140, § 13.]

Sec. **1683-n. False certificate—penalty.** Any officer[1] making a certificate as provided herein, knowing the same to be false or incorrect in any particular, shall be guilty of a misdemeanor and punished accordingly. [35 G. A., ch. 140, § 14.]

[[1]"office" in enrolled bill.—Editor.]

Sec. **1683-o. Misuse of funds by treasurer—penalty.** Any treasurer of such association who in any manner converts the funds or property of such association to his own use or pays out or disposes of the same in any manner different than as directed herein, shall be considered guilty of larceny and punished accordingly. [35 G. A., ch. 140, § 15.]

Sec. **1683-p. Funds advanced by government—certification of by officers.** The president and secretary of said association shall, prior to the time of making any levy or advancing any funds, as herein provided, certify to the board of supervisors the amount, if any, advanced to said association by the government of the United States for the ensuing year in aid of its objects. [35 G. A., ch. 140, § 16.]

Sec. **1683-q. Discontinuing levy—petition for submission of question.** After five successive levies have been made hereunder, any one hundred resident landowners of the county may petition the board of supervisors to submit to the voters of the county the question of discontinuing the levy herein provided for and upon said petition being found sufficient, the said board shall, at the next general election submit, on separate ballot, to the voters, the question whether said levy shall be discontinued. If a majority of the votes be in favor of discontinuing said levy, then no farther levies shall be made. [35 G. A., ch. 140, § 17.]

CROP STATISTICS.

The law with reference to the collection of the crop statistics which are published annually in the Year Book of Agriculture is as follows:

Sec. **1363. Statistics—Iowa year book of agriculture.** That section thirteen hundred and sixty-three (1363) of the code is hereby repealed and the following enacted in lieu thereof:

"Each year the county auditor shall deliver to each assessor the necessary blanks for recording, as to each person whose property is listed, statistics of the previous year as to the number of acres, average and total yield of corn, oats, wheat, and such other crops and information as may be in their possession which may be called for relative to agriculture, agricultural production, agricultural labor, live stock, poultry, and egg production, for publication in the Iowa year book of agriculture. The assessor shall require each person whose property is listed to make answers to such inquiries as may be necessary to enable him to return the foregoing statistics; and said blanks with such entries shall be returned to the county auditor on or before the 15th day of April, who shall tabulate the same by townships, and forward the returns thereof to the secretary of the state board of agriculture not later than the 10th day of May. The secretary of the state board of agriculture shall provide and cause to be delivered to the county auditor before the first week in January the blanks to be used by the assessors and county auditor for the proper return of the information required in this section."

THE IOWA STALLION LAW.

The Iowa law regulating the sale, transfer and use for public service of stallions and jacks is given in the following sections of Chapter 3:

Sec. **2341. Repeal.** Section twenty-three hundred forty-one and section twenty-three hundred forty-two of the code are hereby repealed. That chapter ninety-eight of the acts of the thirty-first general assembly be and the same is hereby repealed. [32 G. A., ch. 120, § 1; 31 G. A., ch. 98, § 1.]

Sec. **2341-a. Registration of pedigree—fee—repealed.** [34 G. A., ch. 100, § 9.] [32 G. A., ch. 120, § 2.]

[See sec. 2341-r.—Editor.]

Sec. **2341-b. Posting certificate of registration—repealed.** [34 G. A., ch. 100, § 9.] [32 G. A., ch. 120, § 3.]

[See sec. 2341-r.—Editor.]

Sec. **2341-c. Grade stallion—repealed.** [34 G. A., ch. 100, § 9.] [32 G. A., ch. 120, § 4.]

[See sec. 2341-r.—Editor.]

Sec. **2341-d. Transfer of certificate—fee—repealed.** [34 G. A., ch. 100, § 9; 33 G. A., ch. 134, § 1.] [32 G. A., ch. 120, § 5.]

[See sec. 2341-r.—Editor.]

Sec. **2341-e. Publishing false pedigrees—penalty—repealed.** [34 G. A., ch. 100, § 9.] [32 G. A., ch. 120, § 6.]

[See sec. 2341-r.—Editor.]

Sec. **2341-f. Stallions—jacks—registration of pedigrees.** No person, firm, company or corporation shall offer for public service, sale, exchange or transfer in this state as registered any stallion or jack over two years old unless and until he shall have caused the name, age, color and pedigree of the animal to be enrolled by the secretary of the state board of agriculture and shall have procured from him a certificate of such enrollment. The secretary of the state board of agriculture shall recognize as registered only such animals as have been recorded in some stud book recognized by the department of agriculture of the state of Iowa, and the certificate of pedigree shall accompany the application for enrollment. The state of Iowa shall be paid the sum of one dollar for each annual certificate of soundness issued by the secretary of the state board of agriculture according to the methods hereinafter provided. [34 G. A., ch. 100, § 1.]

Sec. **2341-g. Examination by veterinarian—certificate renewal—false report.** The owner or keeper of each and every stallion or jack over two years old kept for public service, sale, exchange or transfer shall cause said stallion or jack to be examined by a duly qualified veterinarian who shall be a graduate of a recognized college and registered as a graduate veterinarian by the Iowa board of veterinary examiners, or veterinarian licensed by said board, who shall make affidavit that such animal is free from hereditary, infectious, contagious or transmissible disease or unsoundness, and shall file the same with the secretary of the state board of agriculture. Any veterinarian who knowingly or wilfully makes a false report upon the disease or freedom from disease, or soundness or unsoundness of the animal brought to him for examination shall be punished by the revocation of his veterinarian certificate. The owner or keeper of each and every stallion or jack over two years old kept for public service or for sale, exchange or transfer shall between the dates of January first and April first of each year after their first registration make application for the removal of the certificate in the form and manner as above described. [35 G. A., ch. 188, § 1; 34 G. A., ch. 100, § 2.]

Sec. **2341-h. Disqualification.** The presence of any one of the following named diseases shall disqualify a stallion or jack for public service and no certificate shall be issued by the secretary of the state board of agriculture: glanders, farcy, maladie du coit, coital exanthema, urethral gleet, mange, melanosis, blindness, cataract, bone spavin, ringbone and periodic ophthalmia[1] (moon blindness). Stallions or jacks possessing any of the following named unsoundnesses may receive a certificate but each certificate and every advertisement shall state in large type or writing that the stallion or jack is unsound and shall specify the unsoundness or unsoundnesses which said stallion or jack has: amaurosis, laryngeal hemiplegia (roaring or whistling), pulmonary emphysema (heaves, broken wind), bog spavin, sidebone, navicular disease, curb, with curby formation of hock, chorea (St. Vitus's dance), crampiness, shivering, stringhalt. In cases where stallions or jacks possess any of the above named unsoundnesses in a very aggravated or serious form, the department of agriculture may upon investigation disqualify such stallion or jack from public service, if they consider him so unsound as to be unfit for breeding purposes. [35 G. A., ch. 188, § 2; 34 G. A., ch. 100, § 3.]

[[1] "opthalmia" in enrolled bill.—Editor.]

Sec. **2341-i. Posting certificate—grade stallion.** Any owner or keeper of a registered stallion or jack over two years old offered for public service or for sale, exchange or transfer who represents or holds such animal as registered, shall keep a copy of the state registration and certificate of soundness upon the door or stall of the stable where such animal is usually kept, and where such animals are advertised each and every advertisement shall contain a copy of such certificates or the substance thereof. Where certificates of registration have heretofore been issued by the state board of agriculture an additional certificate of registration shall not be required, but application for certificate of soundness shall be made as hereinbefore provided. Any owner or keeper of a stallion or jack over two years old other than registered offered for public service or for sale, exchange or transfer must secure certificates of soundness from the secretary of the state board of agriculture and advertise said stallion or jack by having and posting handbills or posters not less than five by seven inches in size, and said bills or posters must have printed thereon, immediately preceding or above the name of the stallion the words "grade stallion" (or jack) in type not smaller than one inch in height, said bills or posters to be posted in a conspicuous manner at all places where the said stallion or jack is kept for public service, sale, exchange or transfer, together with a copy of the certificate of soundness issued by the secretary of the state board of agriculture, and where such animals are advertised each and every advertisement shall contain a copy of the said certificate or the substance thereof and the words "grade stallion" (or jack). [34 G. A., ch. 100, § 4.]

Sec. 2341-j. **Examination upon complaint—consultation—expenses.** When complaint is made to the state board of agriculture that a stallion or jack is diseased and on investigation it is by the department deemed necessary, an examination shall be made by the state veterinarian or his duly authorized deputy; the owner of such stallion or jack shall select some recognized graduate or licensed veterinarian to act with the state veterinarian and the said veterinarian shall, on receipt of a notice, act jointly with the state veterinarian, and these two shall appoint a third graduate or licensed veterinarian to act with them and their decision shall be final. In case all three or any two of the experts declare the stallion or jack is eligible to receive or retain a license, then the expense of the consultation shall be paid by the state board of agriculture out of funds collected for registration fees, or if three or any two of the experts declare the stallion or jack not to be eligible in accordance with the provisions of this act, the expense incurred shall be paid by the person owning the animal and it may be collected in the same manner as in any case of appeal in civil action. [35 G. A., ch. 188, § 4; 34 G. A., ch. 100, § 5.]

Sec. 2341-k. **Transfer of certificate—fee.** If the owner of any registered animal shall sell, exchange or transfer the same, he shall file certificate, accompanying the same with a fee of fifty cents, with the secretary of the state board of agriculture, who shall, upon receipt of the original state certificate, properly transferred, and the required fee, issue a new certificate to the then new owner of the animal, and all fees provided by this act shall go into the treasury of the department of agriculture. [34 G. A., ch. 100, § 6.]

Sec. 2341-l. **Imported stallions or jacks—certificates—temporary permits.** Every person, firm, company or corporation importing from foreign countries any stallion or jack into the state of Iowa for use or public service, sale, exchange or transfer shall secure certificates of freedom from diseases and unsoundness from a duly qualified or licensed veterinarian in this state, certifying that said animal is free from any or all diseases and unsoundnesses enumerated in section three of chapter one hundred of the acts of the thirty-fourth general assembly as herein amended. Said certificate must be filed with the secretary of the state board of agriculture, who shall issue a certified copy of said certificate of soundness without charge to said importer which shall serve as a temporary permit to offer said stallion for public service, sale, exchange or transfer until such time as original certificate of pedigree can be produced and state certificate of enrollment and soundness issued. Said temporary permit shall be invalid after ninety days from date of issue. [35 G. A., ch. 188, § 3; 34 G. A., ch. 100, § 7.]

[[1] See sec. 2341-h herein.—Editor.]

Sec. **2341-m. Admission from other states—certificates.** No stallion or jack shall be brought into the state of Iowa from any other state unless accompanied by a certificate of soundness issued by a duly qualified veterinarian who must be approved by the state veterinarian of the state in which the animal is purchased, such examination to cover all diseases and unsoundness specified in section three[1] of chapter one hundred of the acts of the thirty-fourth general assembly as herein amended. Said certificate must be filed with the secretary of the state board of agriculture, who shall issue a permit admitting said stallion or jack into the state. [35 G. A., ch. 188, § 5.]

[[1] See sec. 2341-h herein.—Editor.]

Sec. **2341-n. Certificate for transportation—penalty.** On and after July fourth, nineteen hundred thirteen, no railroad company, transportation company or common carrier shall transport into the state of Iowa except for exhibition or racing purposes, any stallion or jack unless accompanied by a state veterinarian's certificate as provided in section four of this act. Violation of this provision shall be punished as provided in section eight[1] of chapter one hundred of the acts of the thirty-fourth general assembly. [35 G. A., ch. 188, § 6.]

[[1] Sec. 2341-q.—Editor.]

Sec. **2341-o. Permanent certificate of soundness—fee.** Any stallion or jack six years old or over and having successfully passed veterinary examinations for soundness for two consecutive years shall be entitled to a permanent state certificate of soundness. The last examination must have been made within the year in which said cerificate was granted, provided, however, that said permanent certificate must be returned each year to the secretary of the state board of agriculture with a fee of one dollar for renewal and must be accompanied by a certificate signed by a duly qualified or licensed veterinarian that said animal is free from contagious, infectious or communicable diseases. [35 G. A., ch. 188, § 7.]

Sec. **2341-p. Blindness—examination—certificate.** The owner of any blind stallion or jack may upon application have the same examined at the expense of the owner of said animal by a board of three examiners, one to be the state veterinarian or his duly authorized deputy, one to be selected by the owner of the animal, who shall be a graduate or licensed veterinarian, and these two shall appoint a third graduate or licensed veterinarian who shall act with them, and if upon examination and proof furnished, all three or any two members of said board declare that such blindness was caused by accident or disease not transmissible, then upon affidavit of said board the secretary of the state board of agriculture shall be authorized to issue a state certificate. [35 G. A., ch. 188, § 8.]

Sec. **2341-q. False pedigrees of stock—penalty for publishing.** Any person who shall fraudulently represent any animal, horse, cattle, sheep or swine to be registered, or any person who shall post or publish or cause to be posted or published any false pedigree or certificate of soundness, or shall use any stallion or jack over two years old for public service, or sell, exchange or transfer any stallion or jack over two years old, representing such animal to be registered, without first having such animal registered, and obtaining the certificate of soundness from the state board of agriculture, as hereinbefore provided, or who shall violate any of provisions of this act, shall be guilty of a misdemeanor, and be punished by a fine of not more than one hundred dollars, or imprisoned in the county jail not exceeding thirty days or [1]by both fine and imprisonment. [34 G. A., ch. 100, § 8.]

[[1]"both by" in enrolled bill.—Editor.]

Sec. **2341-r. When effective—repeal—pending litigation.** This act shall take effect and be in force from and after the first day of January, nineteen hundred twelve, and sections twenty-three hundred forty-one-a, twenty-three hundred forty-one-b, twenty-three hundred forty-one-c, twenty-three hundred forty-one-d and twenty-three hundred forty-one-e of the supplement to the code, 1907, are hereby repealed on and after the first day of January, nineteen hundred twelve. Nothing in this act shall be construed so as to affect litigation arising prior to the first day of January, nineteen hundred twelve. [34 G. A., ch. 100, § 9.]

Sec. **2341-s. Lien on progeny of stallion.** The owner or keeper of a stallion kept for public services who has complied with sections twenty-three hundred forty-one-a, twenty-three hundred forty-one-b, twenty-three hundred forty-one-c and twenty-three hundred forty-one-d of the supplement to the code, 1907, shall have a prior lien upon the progeny of such stallion to secure the amount due such owner or keeper for the service of such stallion, resulting in said progeny, provided that where such owner or keeper misrepresents such stallion by false pedigree no lien shall be obtained. [33 G. A., ch. 135, § 1.]

[Secs. 2341-a to 2341-d, inclusive, of the supplement to the code, 1907, were repealed by sec. 9 of ch. 100, 34 G. A., shown at sec. 2341-r of this supplement.—Editor.]

Sec. **2341-t. Limitation of lien.** The lien herein provided for shall remain in force for a period of six months from the birth of said progeny and shall not be enforced thereafter. [33 G. A., ch. 135, § 2.]

Sec. **2341-u. Enforcement—procedure.** The owner or keeper of such stallion may enforce the lien herein provided by placing in the hands of any constable an affidavit containing a description of the stallion and a description of the dam and the time and terms of service, and said constable shall thereupon take possession of said progeny and sell the same for nonpayment of service fee by giving the owner of said progeny ten days' written notice, which notice shall contain a copy of the affidavit and a full description of the progeny to be sold, the time and hour when, and the place at which the sale will take place, and posting for the same length of time in three public places in the township of such owner's residence a copy of such notice. If payment of the service fee and the costs are not made before the date thus fixed, the constable may sell at public auction stallion may be a bidder at such sale. The constable shall apply the to the highest bidder such progeny and the owner or keeper of the proceeds, first, in the payment of the costs, second, in the payment of the service fee. Any surplus arising from sale shall be returned to the owner of the progeny. [33 G. A., ch. 135, § 3.]

Sec. **2341-v. Right of contest—injunction.** The right of the owner or keeper to foreclose, as well as the amount claimed to be due, may be contested by anyone interested in so doing, and the proceeding may be transferred to the district court, for which purpose an injunction may issue, if necessary. [33 G. A., ch. 135, § 4.]

Sec. **2342. Publishing false pedigrees—repealed.** [31 G. A., ch. 98, § 1.]

[See sec. 2341.]

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